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# East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2153

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# EAST EUROPE REPORT

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## FUEL-ENERGY OUTLOOK IN CSSR EVALUATED

Prague PLANOVANE HOSPODARSTVI in Czech No 5, 1981 pp 56-67

[Article by Eng Miroslav Fiser and Eng Jiri Chomat, State Planning Commission: "The Prospective Fuel and Energy Balance of the CSSR".]

[Excerpt] From 1973 to 1977 the Czechoslovak economy succeeded in realizing a rate of dynamic national income formation roughly comparable to the average achieved in the 1960 to 1973 period. At the same time, the growth rate of energy consumption did not significantly decrease despite the wide application of comprehensive socialist rationalization.

As in all the industrially advanced countries, the Second World War was followed in the CSSR by a rapid increase in the growth of fuel and energy consumption. As of 1980, the Czechoslovak economy consumed almost four times more primary energy resources than in 1948. The overall cumulative consumption of fuel and energy during the Sixth Five-Year Plan was roughly equivalent to the consumption realized between 1948 and 1961, i.e. in the course of 14 years.

During the dynamic development of the Czechoslovak economy, which has been characterized by a rapid increase in national income formation, there has been an ongoing reduction in the energy intensiveness of the Czechoslovak economy (with the exception of the Third Five Year Plan, in which there were a number of disturbing factors).

Energy intensiveness of national income formation in million tons of standard fuel per koruna	1960	1965	1970	1975	1980 Plan
	0.285	0.317	0.259	0.225	0.205
growth index	100	111.2	90.9	78.9	71.9
Period	1955 to 1960	1960 to 1965	1965 to 1970	1970 to 1975	1975 to 1980
Flexibility coefficient (average percentage increase in domestic consumption of fuel and energy resources necessary for 1 percent of national income formation in 5-year period)	0.07	1.8	0.4	0.5	0.5

In spite of these positive trends, the energy intensiveness of our national economy remains one of the highest in the world. We are dealing with a reality brought about by a number of causes both of a strictly energy-related and generally economic character; some are objectively conditioned by our circumstances (for instance a fuel and energy balance characterized by a large share of solid, mainly low caloric fuels with relatively low efficiency in the consumption area), while it is feasible to eliminate others through intensive rationalization. During the Sixth Five Year Plan there will be a decline in the rate of reduction of energy intensiveness, as a result of the influence of a number of internal and external factors. At the same time, there exists objectively great unused potential in the Czechoslovak economy related to fuel and energy consumption, both in industrial sectors, the non-production sphere, and the consumption of the population.

Because the Czechoslovak fuel and energy balance is heavily dependent on fuel and energy imports, which cover a majority of the increase in fuel and energy consumption, the changed conditions for the assurance of fuel and energy resources along with the high energy intensiveness affect the entire Czechoslovak economy.

The current stage of work on the Seventh Five-Year Plan indicates that the assurance of the planned development of the Czechoslovak economy will be more difficult than in the past. In addition to procuring resources, primarily by assuring a dynamic increase in domestic coal extraction, a number of problems exist which will have to be resolved, and which stem from altered trends in the development of the structure of the fuel and energy balance, especially with regard to a prospective reduction in heating oil consumption, a shortage of graded coal, a diminished increase in natural gas imports, and a worsening in the structure of coking coal.

In order to assure the projected growth rate for the Czechoslovak economy in the Seventh Five-Year Plan, it is possible to count on an increase of about 205 fuel units (7 million tons of standard fuel) of primary energy resources. Three quarters of this increase may be covered from domestic sources and one quarter by imports. This would represent, then, in comparison with recent periods and in accordance with the worldwide trend, a turnaround in the coverage of increases in fuel and energy resources, 95 percent of which were assured through imports in the Fifth Five-Year Plan, and 80 percent in the Sixth.

--The basic component of the Czechoslovak fuel and energy balance remains brown coal, an increase in the mining of which should cover, in the Seventh Five-Year Plan, roughly 25 percent of the overall increase in primary resources. The resolution of the problems of brown coal mining is a key issue. The center of work in this regard lies in the North Bohemian Brown Coal Region, where it is necessary to see to the balancing of current overburden slippage and to prepare the necessary increases in coal reserves for extraction, by both the rebuilding and construction of operationally reliable and efficient technological units. Together with the opening of new facilities, it is necessary to create in this way the preconditions for a further increase in extraction in the Seventh and Eight Five-Year Plans.

Table 3. Structure of the Czechoslovak Fuel and Energy Balance (in %)

	1960	1965	1970	1975	1980	1985
Total resources composed of:	100.0	100.0	100.0	100.0	100.0	100.0
domestic resources	88.1	80.4	74.1	65.6	60.6	63.0

imports	10.9	18.7	25.6	34.1	39.2	37.0
Total demand composed of:	100.0	100.0	100.0	100.0	100.0	100.0
domestic consumption	92.7	92.0	91.5	92.2	93.4	95.0
for export	7.3	7.7	7.8	7.8	6.2	5.0

At the same time, a serious problem is the ongoing decline of qualitative indicators, especially the heat value of the mined coal, because the locations with the highest quality coal have been exhausted, and the extraction is shifting more and more to locations containing coal with lower heat values, and to locations where mining had previously been done in accordance with deep methods.

--The dynamic development of atomic energy should assure the largest portion of increases in fuel and energy resources in the Seventh Five-Year Plan (about 50 percent). Projected electricity production in atomic power plants should reach, in 1985, roughly 150 fuel units (5 million tons of standard fuel, i.e. 4.5 percent of primary energy resources. Atomic energy should cover roughly 80 percent of the overall increase in sources of electrical energy and, in perspective, basically the entire increase when account is taken of the replacement of dismantled facilities for fossil fuel.

--The importation of fuel and energy resources has in recent years been the most dynamic component of the Czechoslovak fuel and energy balance; the share of imports in the coverage of requirements rose from 11 percent in 1960 to roughly 30 percent in 1980. However, during the Seventh Five-Year Plan the import share is beginning to decline as a result of changed conditions on international markets, and by 1985 should reach a level of about 37 percent.

The CSSR is primarily oriented towards the Soviet Union for the assurance of these imports. Imports of Soviet crude oil increased roughly eight times between 1960 and 1980, and natural gas imports, which began only during the Fourth Five-Year Plan, will amount in 1980 to approximately 8 billion cubic meters, or 260 fuel units (9 million tons of standard fuel). To date we have been successful in increasing imports of enriched fuels at a substantially greater pace than appears to be feasible for the years of the Seventh Five-Year Plan. This represents a sharp change in the structure of the Czechoslovak fuel and energy balance, and is a situation to which the energy policies of all sectors must be adapted. Regarding domestic consumption, it is possible to predict a maximum increase for the Seventh Five-Year Plan of 260 fuel units (9 million tons of standard fuel). Within these guidelines, it will be necessary to assure essential requirements for crude oil products for public as well as personal motorized transport, the development of petrochemicals, and other technical requirements, the technological consumption of natural gas and heating oils for ammonia production, and acetylene to insure the production of artificial fertilizers and other products. Increases in the planned needs of these sectors represents, for the Seventh Five-Year Plan, roughly one quarter of the overall increase in primary energy resources. To assure the requisite growth in electrical energy consumption, we must figure that fuel consumption for its production, and the energy equivalent of the electricity from atomic power plants and from imports will increase by about 105 fuel units (3.5 million tons of standard fuel). This means that

a roughly equivalent increment remains for the actual requirements for stationary energy production in all branches of the national economy, or one-third less than was consumed in this sector during the Fifth and Sixth Five-Year Plans. At the same time it must be emphasized that this level of domestic consumption of primary energy resources more likely represents the upper limits of the possibilities, when we take into consideration the many risks which exist in the fuel and energy balance.

--In addition to a lower growth rate of fuel and energy consumption, lesser increases in natural gas supplies and the stagnation of crude oil resources have both had negative influences on all sectors. Even in the Sixth Five-Year Plan the heating oils, especially the light ones, created the greatest bottlenecks in our fuel and energy balance. For this reason, measures of a planned character were introduced which were based mainly on the highly restricted distribution of fuel inventories, with preference for new consumers given to technological requirements, and with an orientation towards and priority deliveries to Prague, Bratislava, and the basin areas of the North Bohemian region. In spite of these measures the consumption of heavy heating oil increased during the Sixth Five-Year Plan by 18 percent and that of light heating oil by 12 percent. One may expect a substantially more complex situation in the Seventh Five-Year Plan.

The rapid growth of crude oil prices on world markets is forcing the CSSR, along with most other industrially advanced countries, to channel the consumption of crude oil products towards the assurance of essential technological requirements, which leads, given the minimized increases in crude oil imports, to a substantial reduction in heating oil consumption and to a revision of existing consumption patterns. The results of current studies indicate that supplies of heavy heating oils during the Seventh Five-Year Plan will remain basically stagnant, and that supplies of light heating oils will see a substantial decline. At the same time, it will also be necessary to create within the national economy the preconditions for the more intensive processing of crude oil at cracking facilities, the construction of which is projected for the period at the end of the Seventh and beginning of the Eight Five-Year Plan. We are dealing with a very complicated structural problem, the resolution of which requires that we give priority to a reduction in the consumption of heating oils for the production of electrical energy and heat, and to the use of the conserved oil to cover the most essential new technical requirements. In instances where it is feasible, it will be necessary to shift to other fuels. The extent of these modifications makes the existence of an energy and especially a rationalization policy essential for the relevant sectors and branches.

--Natural gas consumption has increased in recent years at a rapid pace, for practical purposes doubling during the Sixth Five-Year Plan. At the same time this was oriented in such a way that, in addition to the traditional consumption areas, savings were assured of heating oils, coke, and graded coal, all of which were in short supply, a contribution was made to the improvement of living conditions, and a planned conversion of coal gas consumers was carried out. During the Seventh Five-Year Plan there will be an expected increase in natural gas consumption of about 20 percent, which is substantially lower than in the previous 5-year period. This will require more efficient management of this enriched fuel, as well as no expansion of its use for heat production with the exception of priority areas. It will be necessary to focus its application on essential technological requirements, and in addition to the conversion of coal gas consumers, and to a certain extent as well to the replacement of heating oils and graded coal.



--Coal gas consumption increased during the Sixth Five-Year Plan by 350 million cubic meters, i.e. by 10 percent. During the Seventh Five-Year Plan its production and consumption, in accordance with long range plans, will decline as a result of the conversion of consumers to natural gas. When converted to standard fuel units, the level of enriched fuel resources (of heating oils and gases) will essentially stagnate during the Seventh Five-Year Plan, a fact which will have a negative influence on the reduction of the energy intensiveness of the Czechoslovak economy, in comparison with the increase in enriched fuel supplies in the previous 5-year period.

--The serious condition of the renovation of the Czechoslovak coke production facilities influences the situation in coke supplies. The consequence of this situation was a failure to fulfill coke production targets during the Sixth Five-Year Plan, which was in turn a factor in the failure to meet export targets and, in the past 2 years, in a failure to cover deliveries to market inventories. These difficulties will also influence the years of the Seventh Five-Year Plan. The increased mining of brown coal will be oriented during the Seventh Five-Year Plan towards assuring the operation of new steam power plants and towards the assurance of heat production in industrial sectors. The current level of work points to a number of extremely serious problems in this area, both from the viewpoint of assuring the requisite extraction level and in terms of tightness in the supplying of graded coal and powdered coal with higher heat values.

A moderate decline in the mining of bituminous coal, and a reduction in its importation from the Peoples Republic of Poland will, for practical purposes, be felt in all areas of consumption. The situation is particularly grave in the case of graded coal, where it will be necessary to limit substantially deliveries even for consumer inventories.

Electrical energy consumption, in relation to national income formation, should increase more rapidly in the Seventh Five-Year Plan than in the Sixth Five-Year Plan as a result of the implementation of the nuclear program and in connection with its application as a replacement for enriched fuels.

The projected structural changes in the fuel and energy balance will also require modifications in the area of assuring heat supplies for the national economy. The construction of new heat sources, and in some instances the rebuilding of existing sources, must be undertaken in accordance with the principles approved in CSSR Government resolution number 130/1979. In principle, it is necessary to move to the construction of larger heat sources which would comprehensively supply adjacent localities while at the same time making more efficient use of the fuel and energy resource inputs and utilizing to a greater extent lesser quality coal.

Even though the fuel and energy balance for the Seventh Five-Year Plan will be made more precise, it is possible to state at this time that it will be substantially more taut than in the previous 5-year period, both in terms of the absolute volume of fuel and energy resources, and in terms of their structure.

As a consequence of the above alternatives in the prospective assurance of fuel and energy supplies, and in accordance with worldwide trends, it is expected that the Seventh Five-Year Plan will see a further progressive reduction in the energy in-

tensiveness of the Czechoslovak economy has been concretely expressed in the design of the State Target Program-"A Long-Term Program for Rationalizing the Consumption, Conservation, and Utilization of Fuel and Energy", which was approved by the CSSR Government in resolution number 247/1980, and the measures of which are to become an organic component of the Seventh Five-Year Plan in its later stages. The implementation of the above measures will create, in the extraordinarily complex situation faced by our fuel and energy balance and whole national economy, the preconditions for realizing our economic growth targets while minimizing increases in energy consumption.

In its totality, the State Target Program represents minimal measures for reducing the energy intensiveness of the Czechoslovak economy, measures essential to the realization of conceptions regarding its prospective development, given the current level of knowledge concerning the feasible alternatives for the fuel and energy balance. For this reason the program provides for concrete measures aimed at achieving savings of at least 12.4 million tons of standard fuel in 1985 in comparison with 1980, and 27.2 million tons of standard fuel by 1990, in comparison with 1980 figures.

To achieve the above objective, preparations are being made in the areas of enrichment, modification, and transportation of fuels and energy in order to convert selected condensation electric power plants and the Bohunice nuclear power plant to more efficient heat production operations, utilizing the heat which is produced both in industry and to supply the population, so as to construct boilers which operate with the fluid ignition of normally unused types of coal, as well as for measures to improve the operational characteristics of 110 and 200 megawatt electric power units. Significant savings should also be achievable by improving the management of the whole electrical energy system and through innovations in the transmitting and distributional network, both of which will increase the reliability of supplies, in addition to reducing transmission losses.

--One of the major potential sources of energy conservation is in ferrous metallurgy. Its development after 1980 should proceed basically without an increase in fuel and energy consumption for technical purposes, given the maximal utilization of its unused capacity. This is primarily a question of the gradual introduction, and further development of more energy-conservative technology for steel production, greater utilization of secondary raw material and fuel and energy supplies, the gradual automation of blast furnace control systems, the introduction of bell-less throats, etc.

--Important conservation measures are being formulated in machinery production. The development of consumption in this sector is influenced mainly by the modernization of the machinery building base, the introduction of more energy-conservative technologies for the production of castings, and the rebuilding of heating systems. The most important areas of conservation are projected to be in metals valuation, in the quality and energy conservation properties of the products produced, both of which will finally become evident principally in other sectors, in services to the population and in households. In this area, a number of measures are being formulated for the innovation of existing products, for the introduction of the mass production of solar equipment for the utilization of solar energy for heating water, the development of products for measurement and regulation, and the assurance of the production of highly efficient light sources.

--A significant volume of fuel and energy sources are consumed in the chemical and consumer industries. At the same time, here as well there exists significant unused capacity which may be utilized. For this reason, a number of measures are being developed for the introduction of more energy-conservative technological processes, for the utilization of secondary fuel and heat sources (especially, waste timber products) for heat generation, as well as for the modernization of existing operations and boiler management.

The construction of facilities for the production of insulating and heat resistant fibers, the production of chemical insulation materials designed to reduce heat losses by improving the thermal insulation properties of buildings, and the production of windows with more efficient thermal insulation properties will make contributions to conservation efforts that extend beyond individual sectors, as will an increase in the collection and recycling of motor oils, and a number of other measures.

--The introduction of progressive technologies makes possible the achievement of important savings in the production of building materials as well, especially by increasing the production of improved thermal insulating and heat resistant fibers and materials, and improved thermal insulation properties of facilities which are constructed.

--It is likewise possible to conserve fuels and energy in the agricultural-foodstuff complex. Measures are being formulated which focus primarily on an optimal organization of agricultural transport, innovations in agricultural drying facilities, the intensive utilization of secondary and new energy sources.

--Conservation in the transportation sector (excluding individual motoring), should also contribute to a reduction in energy intensiveness, particularly to an absolute reduction in the consumption of diesel fuel. At the same time, studies are focusing on greater utilization of electrical traction, the introduction of modern transportation equipment, improved organization of the loading of the vehicle fleet, restrictions on the most energy intensive forms of transport, and regulational measures for highway transportation.

--Substantially greater attention than before will be devoted to the utilization of secondary energy resources and to new forms of energy resources, both in industry and in other sectors. This will be primarily a question of utilizing the heat from the compressor stations of the long distance gas pipelines, the development of incineration of the wastes from communal housing and industry, the use of geothermal energy for heating, and of solar energy for heating water, etc.

The assurance of the objectives incorporated in the project "A Long Range Program for Rationalizing the Consumption, Conservation, and Utilization of Fuels and Energy" will create, in conjunction with the resolution of the fuel and energy balance of the Seventh Five-Year Plan, the preconditions for the successful mastery of the demanding tasks awaiting the Czechoslovak national economy in this area after 1985. And although work on a comprehensive resolution of economic development for the Eight Five-Year Plan is only in its initial stages, and only individual and orientational considerations have been formulated for the subsequent period, to the year 2000, it is evident that the difficulties in the assurance of the necessary fuels and energy for the realization of the dynamic development of the Czechoslovak economy over the long term will not be any less than they currently are in a number of sectors, and will worsen further.



The seriousness and depth of these problems indicates unambiguously that they cannot be solved only within the sphere of the fuel and energy balance, by increasing the extraction and imports of fuel and energy while maintaining the current rate of reduction of the energy intensiveness of the Czechoslovak economy. All sectors of the national economy must take an important part in the resolution of these problems, because we are dealing here with one of the most vital factors in the prospective development of the Czechoslovak economy.

It is a question, therefore, of substantially intensifying the rationalization trends in the whole Czechoslovak economy, in comparison with current efforts and the projected development for the Seventh Five-Year Plan, but especially for the period after 1985 and over the long term. In connection with this it is essential to assure a substantial increase in the level of valuation of fuels and energy, with the objective of obtaining consistently higher economic outputs from the fuel and energy resources consumed. This requires a conscientious intensifying and speeding up of innovative processes in the whole science-research-production-use cycle.

Another important precondition for the realization of a more rapid reduction of the energy intensiveness of the Czechoslovak economy (and at the same time its overall efficiency) is the improved utilization of plant and equipment. Their current condition is one of the reasons for shortcomings in the economic outputs from these facilities. At the same time, the construction of plant and equipment in and of itself consumes significant investment resources and energy supplies. However, due to limited investment resources and construction and assembly facilities it is impossible consistently to maintain production capacity at the most modern, state-of-the-art level, with the result that the economic outputs from existing plant and equipment continues to decline, while per unit demands on energy increase.

Of the other important conditions, on which the assurance of the dynamic development of the Czechoslovak economy in terms of fuel and energy supplies depends, both now and in the future, it is necessary to emphasize the following:

- a reduction in the materials intensiveness of the Czechoslovak economy, especially in machinery, equipment, and structures;

- a substantial increase in the technical level of a number of our products so that their technical and economic specifications are comparable with the products of the industrially most advanced countries. This will make possible a greater application for them in international exchange while simultaneously, in a majority of cases, being reflected in their lower energy consumption in operation, and in lowered energy intensiveness in their production;

- an improvement in the technical level of production through modernization of existing production equipment, which will be reflected in lower standard consumption of fuel and energy;

- the maximum utilization of secondary and new energy supplies, which are, given the shortage of primary energy resources, a potential reserve for the Czechoslovak fuel and energy balance. It is not only a question of utilizing secondary fuels and waste heat, but also of pressurized secondary energy resources, for instance the pressure of blast furnace gas, natural gas, and the pressure of other gases and fluids for the production of electrical energy and for mechanical work, as well as



using low potential heat with the aid of heat pumps, etc. An additional trend which will influence the level of fuel and energy consumption over the long term, especially after 1990, will be the application of new, more efficient and, consequently, less energy-intensive technologies and processes. Wasteless technologies will evolve simultaneously.

The solution of these problems will be very demanding, but it is essential. It requires increased initiative on the part of scientific and research centers in the formulation of new technical and technological solutions which will be more energy efficient. This will place qualitatively new demands on our machinery base, because without providing for the necessary, economically and energy-wise more efficient machinery and equipment, it will not be possible to utilize those fuel and energy supplies which do exist in our economy. Complex tasks also stand before administrative agencies at all levels, because the successful resolution of these issues is impossible without the comprehensive assurance of all the national economic links. However, the realization of these intentions will be decided in the production sphere. The commitment of production sphere employees to the discovery and utilization of all unused potential for the consumption of fuels and energy is the basic determinant of the dynamic of the development of the sector.

Studies concerning the most efficient consumption of energy have, due to difficult conditions in the assurance of fuel and energy supplies, been proceeding on a worldwide scale. They have been incorporated as well into the long term target programs of economic cooperation among the CEMA member countries, especially regarding a reduction in fuel and energy consumption through improving and developing new technological processes, reducing energy losses in all sectors, and the maximum use of secondary and new energy resources. It is in the interest of the CSSR and its further economic development to take an active role in these studies, to support them and to see that their results are put into practice as soon as possible.

Assuming the realization of the above positive trends in the Czechoslovak economy, the consumption of primary energy supplies, given the dynamic development of the national economy, can fluctuate by the year 2000 between 3,660 and 3,950 fuel units (125-135 million tons of standard fuel) bearing in mind that according to existing knowledge the level of assurable resources will approach the lower boundary of the above limits by this time. Changes in development in the Seventh and Eight Five-Year Plans, in comparison with current projections, may influence the projected level, but alter nothing of the validity of the essential basic trends in the area of further development accompanied by a reduction in the energy intensiveness of the Czechoslovak economy.

In covering increased fuel and energy consumption in the post-1990 period, the most important factors will be electrical energy produced by atomic power plants, in conjunction with imported electrical energy and natural gas. In connection with the highly restricted worldwide geological deposits of crude oil, it is not feasible to count on an increase in crude oil imports beyond the projected level for 1985 or 1990. On the contrary, oil imports should be gradually reduced which, given expanded crude oil processing, will mean a further limitation in the consumption of crude oil products in the area of stationary energy generation.

It is likewise not feasible to count, after 1990, on any substantial increase in the extraction of domestic fuels. In the case of brown coal and lignite, the maintenance of extraction at a 1990 level will be a great success because of the shift to ever more difficult technical and economic conditions, and due to the limited character of the geological deposits. At the same time, just as in the Seventh and Eight Five-Year Plans, the heat value of the mined coal will gradually decrease, a fact which, in conjunction with the problems in the assurance of the extraction level, implies a lessened contribution by brown coal to the resolution of the fuel and energy balance of the year 2000, on the order of 1 to 4 million tons of standard fuel more than the 1990 level. At the same time, the importance of brown coal as a technological raw material will increase.

Natural gas will assume, after 1990, more and more the position of a technological raw material which will replace ever more limited sources of crude oil. Crude oil consumption will be oriented, to the maximum technically feasible extent, to the coverage of the essential requirements of the petrochemical industry, other technological needs, transportation, etc. These realities are, clearly, reflected as well in the further complication of the conditions for assuring an increase in natural gas imports. At the same time we may expect the formulation of new directive in the utilization of certain types of fuels both in technical areas and in the production of feed proteins.

The predominant part of the increase in the consumption of primary energy resources will have to be covered, therefore, by electricity and heat from atomic power plants and the importing of electrical energy. A consequence of the priority position assigned to atomic energy in the resolution of the Czechoslovak fuel and energy balance will be a substantial increase in the electrification of the country. Electrical energy will, over the long term, and within the framework of its sources and the technical suitability of equipment, push aside the enriched fuels of which there are shortages; crude oil products, natural gas, and coke. Likewise, work on the resolution of this problem has been started within the framework of long range target programs for economic cooperation among the CEMA member countries. The timely adjustment to these facts will, to a great extent, also predetermine the volume of electrical energy consumption in given sectors, thereby exerting a basic influence on the rate of their development, because electrical energy will cover the greatest share of increased fuel and energy supplies.

Nor will the alternatives for the development of atomic energy and the importing of electrical energy be unlimited after 1990, because of the capacity potential of capital construction, deliveries of nuclear fuel, and a number of additional reasons. And even though it will be necessary to mobilize all of the resources of the Czechoslovak economy to assure the maximum rate of growth, the extent of electrical generation from atomic power plants will remain an open issue for some time yet.

An analysis of the alternatives for the prospective coverage of the requirements of the Czechoslovak economy with fuel and energy supplies indicates that the level of feasible fuel and energy resources and the level of energy input valuation achieved in production processes will significantly influence the dynamic of economic development.

It is necessary to create the preconditions for a resolution of the extraordinarily complex issues of the long range fuel and energy balance immediately, during the work on the Seventh Five-Year Plan in all branches of the national economy.

Increasing the efficiency of utilization of fuel and energy resources, in a comprehensive sense, is in the interest of all sectors, because the previous sectoral practice, based on the certainty of obtaining the fuel and energy resources to assure the projected development of production, will to a greater and greater extent be reversed, i.e. the question will be one of how much development of production is possible given the available fuel and energy resources and the efficiency with which they are utilized.

To assure the long range dynamic development of the Czechoslovak economy it is essential to focus efforts right now on the implementation of "A Long Range Program for Rationalizing the Consumption, Conservation, and Utilization of Fuels and Energy", and concurrently to embark on the path of the most efficient utilization of raw materials so that the maximum feasible economic outputs are achieved from their utilization. Prospective economic development must, in accordance with worldwide trends, be based, to an increasing extent, on increased efficiency and work quality, an intensifying of innovative processes in the national economy, the rapid implementation of the results of scientific and technical development, and a deepening of international and socialist integration, accompanied by a concurrent reevaluation of investment policy so as to substantially increase the utilization of plant and equipment, labor productivity, and so that crucial export products are given priority treatment.

The rationalization of fuel and energy consumption and an increase in the efficiency of the Czechoslovak economy in conjunction with the highest possible economic valuation of fuel and energy inputs represents a strategic objective in the realization of the energy conservation aspects of Czechoslovak economic development, the effectiveness of which is clear and indisputable over the long term, and the significance of which for the period around the year 2000 cannot yet be fully evaluated.

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FINAL STATE ACCOUNTING FOR 1980 ANALYZED

Prague HOSPODARSKE NOVINY in Czech 19 Jun 81 p 4

[Article by Engr Belo Bosak, Federal Ministry of Finance: "Closing of State Accounts for 1980: It Was Not a Simple Year"]

[Text] At the end of May, the Federal Assembly as well as the Czech and Slovak National Councils discussed the final state accounts of the federation and of both republics for 1980. Following is the information on the principal results of state financial management last year.

The general concept of the state budget for 1980 was based on the balance between revenues and expenditures. This balance was ultimately achieved, although a number of departures from planned development which took place in the national economy in 1980 necessitated adjustments in the plan and state budget in the course of the year.

Positive Effect of Economy Measures

In order to achieve better final results and to restrain the unfavorable tendencies in our national economy, the state budgets for 1980 included a number of tasks aimed at greater efficiency and economy. Among them were in particular: more items were included in, and stricter criteria were specified for, the group of limited expenditures (for example, a limit was set for expenditures on propaganda for the first time in 1980); stricter economy measures were enforced in automobile traffic; the administrative labor force was reduced and so on. Despite certain problems in the implementation of these measures, results were achieved in 1980 which consolidated the system of economy and also brought a financial effect--more than Kcs 2.5 billion.

A positive feature was the fact that, as in previous years of the Sixth Five-Year Plan, CSSR state budgets were balanced also in 1980 (See Table 1). In view of the departures from the planned structure of revenues and expenditures in the state budgets and continuing deficit in our balance of payments, however, this result should not be overestimated.



**Table 1**

**Revenues and**

	<u>Federation</u>	<u>CSR</u>	<u>SSR</u>
Own revenues	160.51	69.31	27.62
Grants from federal budget	--	56.94	42.70
<b>Total revenues</b>	<b>160.51</b>	<b>126.25</b>	<b>70.32</b>
Own expenditures	60.87	88.63	51.85
Grants to budgets of republics	99.64	--	--
Grants to national committees	--	37.62	18.47
<b>Total expenditures</b>	<b>160.51</b>	<b>126.25</b>	<b>70.32</b>

Despite certain departures from the planned structure of revenues and expenditures, the administration of budgets preserved essentially its proportional nature. The integration and coordination function of the state budget of the Czechoslovak federation was effectively exercised in relation to the state budgets of both republics. While the revenues of the state budget of the Czechoslovak federation accounted for 62.3 percent of total revenues of all three state budgets, its actual expenditures amounted to only 23.6 percent of total expenditures. The overwhelming part of expenditures of the state budget of the Czechoslovak federation was transferred in the form of grants to the state budgets of the two republics.

The overall results of financial management was affected also by the financial management of national committees which registered a development in 1980 similar to that of the previous years. Table 2 offers a summary of the results achieved in financial management by the national committees in 1980. The total revenues of national committees amounted to Kcs 104.91 billion which was 4.3 percent above the plan due to the use of larger supplementary and other resources in amounts exceeding the detailed budgets previously approved.

In addition to their own revenues and grants and subsidies from the state budget, the national committees included in the revenues of their budgets Kcs 8.53 billion from supplementary resources (Kcs 6.29 billion in the CSR and Kcs 2.24 billion in the SSR) which corresponded approximately to the amount of these resources in individual years of the Sixth Five-Year Plan.

The financial management of national committees resulted in a surplus of Kcs 3.07 billion in 1980 (a surplus of Kcs 10.43 billion for the entire Sixth Five-Year Plan). In accordance with the guidelines of budget policy for the Sixth Five-Year Plan, these are used for replenishment of the reserve and development funds, and constitute the resources for the implementation of elections programs, particularly of the "2" campaign.

Table 2

## Financial management of national committees in CSSR in 1980

	<u>Reality in billion Kcs</u>	<u>Index 1980/1979</u>
Revenues, total	104.91	102.1
Including		
Own revenues	35.72	107.3
total grants planned	25.50	93.2
planned subsidies	30.59	100.0
Expenditures, total	102.84	102.3
Including		
investment grants to economic organizations	6.41	104.7
expenditures on investments by budgetary and subsidized organizations	24.32	101.0
investment grants to economic organizations	6.73	93.5
noninvestment expenditures of budgetary and subsidized organizations	65.38	103.6
Surplus	2.07	94.5

## Missing Profits

Certain positive features were reflected in the financial management of state economic organizations in 1980. The planned volume of performance was surpassed (fulfillment amounted to 100.3 percent). In comparison with the previous year, the costs related directly to labor and use of capital assets (wages, material costs, including depreciation allowances and services of nonmaterial nature as a whole) relatively declined by Kcs 3.8 billion (relative savings with reference to the plan amounted to Kcs 0.58 billion). These results reflect the growth of labor productivity, rationalization, scientific and technological progress, efforts to achieve economy in production and the results of workers' initiative.

On the other hand, some problems arose in economic relations which were due to external conditions, disruption of rhythm in production and irregularities in supplier-customer relations. All this resulted in increased financial costs and was the main reason for the nonfulfillment of the plan in regard to overall costs and profits.

Planned profit fell short of the goal by Kcs 1.26 billion statewide. At the same time, however, the planned volume of extraordinary revenues was surpassed by Kcs 1.42 billion, foreign-trade profits by Kcs 0.20 billion. The slight excess in planned performance (fulfillment 100.3 percent) produced Kcs 0.26 billion in profits above the plan. The reason for the nonfulfillment of the profit plan was the relative increase of Kcs 3.15 billion in costs, primarily financial costs, above the plan.

Planned financial costs were surpassed Kcs 3.87 billion. The interest absolutely increased Kcs 4.24 billion in 1980, Kcs 2.42 billion of which were in the federal Ministry of Foreign Trade. Bank interest on operation credits in other economic organizations rose Kcs 1.25 billion due to increased inventories and problems in supplier-customer relations. The plan partly anticipated this increase in interest, but the interest plan was surpassed Kcs 2.78 billion.

The second reason for the fact that planned financial costs were exceeded was the unplanned cost of deficiencies, damage, penalties and fines. Deficiencies and damage on economic assets amounted to Kcs 1.27 billion in 1980 and increased 12 percent in comparison with the previous year (they constantly declined in the previous 3 years). The balance of paid and received penalties and fines in costs amounted to Kcs 0.79 billion. The paid penalties and fines amounted to Kcs 3.75 billion and increased Kcs 0.26 billion in comparison with the previous year.

The material volume of investments in the entire national economy amounted to Kcs 150.6 billion and was 1.4 percent larger than in 1979. The slowdown in the growth rate of investments in the last years of the Sixth Five-Year Plan contributed to the more balanced development of the national economy. It contributed also to the solution of some chronic problems. This, however, definitely calls for a much more vigorous enforcement of efficiency criteria in investment projects, insistence on rapid returns on investment funds, an increase in the share of investments for modernization and more effective use of existing capacities of capital assets.

#### Unfavorable Trend in Inventories

The unfavorable trend in inventories registered already in the previous years also continued in 1980. Following the exclusion of the effect of their new evaluation, the inventories of economic organizations included in the financial plan increased 5.4 percent. This rapid increase reflects the long-term shortcomings of the Czechoslovak economy in supplier-customer relations, in material-technical procurement, investment area, planning area (lack of clear concepts for the development of individual sectors, unbalanced structures) and last but not least also in management (inadequate inventory control, inadequate links between individual plans and sales plans and MTZ [technical and material procurement], and so on). Inventories for production purposes increased more rapidly--8.7 percent (primarily the supply of materials in stock by 8.8 percent and articles of gradual consumption by 10.4 percent) and amounted to Kcs 145.8 billion on 31 December 1980. In comparison with their size at the beginning of the year, the inventories for sale increased 7.1 percent and their value amounted to Kcs 172.2 billion at the end of December 1980.

The state budgets and the budgets of national committees finance the major part of expenditures earmarked for satisfaction of the population's social needs and the needs of society as a whole, and also supply funds for the future development of nonproduction funds. The further development of social security, schools, health care, culture and housing construction was financed from these funds in 1980. The necessary allocations were made for protection and security, state administration and judicial organs, and the large area of budgetary and subsidized organizations' expenditures on the economy (such as administration and maintenance of roads, local economy) was financed from these funds. The amounts and the average increase in these expenditures are shown in Table 3.

Table 3

Noninvestment expenditures of CSSR budgetary and subsidized organizations for cultural and social purposes

	<u>Billion Kcs</u>	<u>Budget Fulfillment (in percent)</u>	<u>Index 1980/1979</u>
Total	125.58	101.0	106.7
Including			
social security	70.51	100.1	108.0
schools	22.35	101.3	105.8
health care	20.15	101.9	106.3
culture	4.03	110.6	99.5

#### Kcs 8,900 per Capita

The noninvestment expenditures on cultural and social measures per capita amounted to Kcs 8,202 (they increased 25.2 percent in comparison with 1975). In addition to these funds supplied from the state budget, the population receives other services free of charge which are financed by enterprises and organizations. After adding these expenditures, the total social consumption per capita amounted to Kcs 8,900 in 1980.

The big increase in the expenditures on social security in 1980 as compared with 1979 was caused by the impact of revisions effected on 1 August 1979. If we disregard the effect of these changes, the expenditures on social security increased 3.7 percent in 1980 in comparison with 1979. A total of Kcs 42.5 billion was paid in retirement benefits in 1980, while the average old-age benefits amounted to Kcs 1,181 per month. A total of Kcs 15.5 billion was paid in allowances for families with children.

The relatively rapid increase in the expenditures on schools, which is due to the population development and modernization of the entire school system, continued in 1980. The number of kindergarten classes, for example, increased 6,698 in comparison with 1975, although the plan had anticipated an increase of 2,502 classes. Because of putting many capacities into operation above the plan, budget costs were exceeded and this excess was financed largely from the supplementary resources of national committees.

In health care, particular attention was paid to preventive care, modernization of diagnostic methods and facilities, and to care for women and children in 1980. The noninvestment expenditures on health care per capita amounted to Kcs 1,314 in 1980, Kcs 70 more than in 1979. Expenditures on drugs and special medicines financed from the budget amounted to Kcs 4.9 billion, 10.9 percent more than in the preceding year. Expenditures on health care were exceeded particularly; supplementary funds of national committees were used for this purpose.

The expenditures on culture amounted to Kcs 4.03 billion and were thus on the level reached in the preceding year. The intention of the state budget was thus implemented, namely, to slow down the increase in expenditures in this area because the actual trend in these expenditures during the 1976-1979 period surpassed the original estimates for the five-year plan.



The financial results achieved in 1980 and in the preceding years of the Sixth Five-Year Plan confirm that one of the main reasons for the nonfulfillment of all planned goals is the fact that we did not succeed in effecting a radical change in the implementation of the long-term strategic line aimed at increasing production efficiency, economy and quality of all work, at making capital investments more effective and more realistic, at the application of scientific and research achievements in practice.

As the analyses reveal, it was not a simple five-year plan because we had to overcome a number of problems which originated both in the development of external economic conditions and shortcomings in our own work. The 16th CPCZ Congress drew our attention to the implementation of the program goals which we face in the 1980's.

Our principal task at the present time is to translate the congress resolutions into reality by the consistent implementation of tasks even in 1981. The results achieved in the first 4 months of this year, however, show that we did not effect either in the dynamism of development or in the fulfillment of some qualitative tasks the change which is necessary for a more rapid intensification of the national economy. The fulfillment of the 1981 tasks, however, is absolutely imperative for the fulfillment of the entire five-year plan. For this reason, it is necessary that, in accordance with the resolutions of the 16th CPCZ Congress, every work collective, every member of management do everything in his power in order to translate without compromise the congress resolutions into the reality. This is the fundamental political task, our social duty and an objective economic necessity.

What is involved is the entire style of management, decisions on the new approaches to management and implementation of tasks. Essentially, this will require the application of scientific management methods. As the general secretary of the CPCZ Central Committee, Comrade G. Husak, pointed out in his speech to the CPCZ okres conference at Kladno, it is impossible to plan, to manage, to work in the old way, if we want to hold our ground in the new, more difficult and more demanding conditions.

15901

CSO: 2400/224

## SOME SOLUTIONS TO LABOR SHORTAGES OFFERED

Prague HOSPODARSKE NOVINY in Slovak 3 Apr 81 p 6

[Article by Eng. Stefan Stastny, economic manager, general administration of Slovchemia, Bratislava: "Today's Problem: Availability of Labor," from the series: "The Set of Measures in Enterprise Practice"]

[Text] Among the most important requirements in implementing the Set of Measures for Improving the Management System is to ensure an increase in work productivity, make production, less labor intensive and release workers to needed sectors of our national economy. At the same time, this approach makes it possible to create additional economic values with reduced the labor force. This, in turn, has a positive effect on the wages payable available to the workers in enterprises and organizations in logical agreement with the concepts of commitment, that is, the continuity of the tasks of the 1981 plan or their inclusion in the principles of counterplanning.

In the past, there have been many attempts in our country to implement the Shchokino method for job streamlining. Some were fairly successful, others less so; some disappeared immediately, others gradually. For example, the electrolysis shop in the n.p. Duslo Sala was having great difficulty in fulfilling the plan. The work was demanding and unpleasant and the number of workers was always below planned requirements. There were also problems with labor discipline but also in the quantity and quality of production. Following the first reports on the Shchokino method, it was decided to implement the method just in this plant with lagging production. In order to interest the workers in it, the remuneration system was changed to the principles employed by the Shchokino movement today. The decision was to allocate the plant the full wages payable for the planned number of employees with the proviso that for the personnel spared there would be a 10 percent reduction in wages payable. This was substantially more than current principles of incentive provide for economies in personnel. For the beginning of the program, however, this measure was necessary and was reflected in the positive results, although, it did have certain negative impact as well. The planned level of employees for the plant was 180 and 166 more actually assigned at the beginning of the experiment. During the second year of the experiment, the number fell to 146. The plant fulfilled its planned goals without serious problems. Product quality increased, the accident rate, the technical standards, and use of raw materials and energy went down and, what was essential to the workers, their pay increased up to 10 percent per year. It is true that within the scope of the several thousand-man work force in the entire enterprise, this fact could not individually affect the overall growth of earnings in the enterprise. On the other hand, it had a great motivational effect upon the other workers.

However, wage restructuring played a negative role here, moving the entire enterprise into a higher category. The basic wages were increased at the expense of the incentive wage component the increased productivity on the part of the better motivate electrolysis plant workers evaporated, as it were, and it was not possible to convince them that the total amount of wages payable remained at the disposition of their plant. Thus, shortcomings in the political preparation for wage restructuring became manifest here and this calls attention to the seriousness and the necessity of systematic political, organizational and preparatory work. At the same time, there are dangers facing the method of economizing on personnel.

Another example. Following adequate preparations, economies in personnel were carried out and the wages saved were redistributed. One can say that almost 90 percent of the savings were distributed according to existing principles. But this was a one-time action, without further systematic development in other units as well, and was soon forgotten. From this it can be concluded that the realization of the Shchokino method requires systematic and constant attention on the part of the party and trade union officials and the systematic development of personal involvement. When introducing this method, the obstacles had been explained as a so-called upper limit in average salary growth. In spite of this, however, the Shchokino method was put into practice in other enterprises as well, e.g., in the Slovensky Hodvab [Slovak Silk Works] in Senica; in Chemko in Strakonice; and in Slovnafta [Slovak Petroleum Works] in Bratislava, where 100 percent of the wages saved were actually made available, so long as the number of employees saved did not exceed a certain limit. The situation in subsequent periods becomes much more complicated. Affecting this are:

- the obligatory economies in personnel,
- the possibility of 100 percent allocation when carrying out these economy measures,
- the possibility of allocating approximately 60 percent of savings in excess of plan in the industry.

#### Obligatory Economies

As of 1 January 1981, the actual number of employees within Slovchemia [Slovak Chemical Industry] was about 800 workers over the stipulated annual average for 1981. We do not assume that we shall succeed in reducing this figure immediately. This means that in order to maintain this annual average there will have to be, in the final analysis, a reduction of 1,400 to 1,600 workers. And as the skilled employees trained for production, maintenance and other aspects of the chemical industry leave, it will have a damaging effect in subsequent years when we shall need additional workers for new plants and they will have to be trained.

A further problem is the relocation of a number of employees within Slovchemia and an increase in the number of employees where they are needed from the standpoint of bringing [additional] production capacities on stream and increasing production. Here I wish to use the 1980 annual average, as a planning indicator. As opposed to last year, we will need approximately 1,400 employees on a yearly average basis for new operations. We are talking here of an addition of 400 employees for the Chemicke zavody J. Dimitrova [J. Dimitryi Chemical Works] in Bratislava for propylene production, 400 workers for Chemosvit for the production of polypropylene silk, coming on stream, 86 workers to expand production in the Slovensky hodvab [Slovak Silk Works] in Senica,

84 workers for the Povazske chemicke zavody [Povazske Chemical Works] in Zilina, 52 for Chemlon in Humenne, 58 for the Slovenske lucobne zavody [Slovak Chemical Works] in Hnusti and additional workers for other enterprises. By liquidating certain production facilities, we shall achieve a savings of 310 employees, with the largest number, 240, in Chemosvit. The planned increase in employees is 340, and thus it will be necessary to achieve a reduction of 800 employees in other enterprises on an annual average basis which is more than 1.25 percent.

The details of this reduction were drafted selectively, which stems from the varied product mix, labor productivity and the units of labor per product in the production process. This means that in 10 enterprises we realized an obligation reduction in the yearly average of 1.66 percent and in other enterprises progressively less. To guarantee this reduction without wage incentives would probably be still more difficult. In order to ensure these economies, therefore, we considered the possibility of a temporary or partial system of wage incentives.

We purged the obligatory savings figure of those improvements which we make each year, as well as of those brigade workers whom our enterprises took on without our approval. As for the remainder of the obligatory personnel saving, following agreement with the trade union committee and with higher authorities, we shall release bonuses in the amount of 30 percent of the wages payable under obligatory economies for each worker by which the work force is reduced. We are of the opinion that this first form of implementing the method will be successful and that we shall manage this problem in 1981, as well even if especially difficult problems should arise in some enterprises. The problems stem from the fact that in some high productivity operations in our country, production is falling off, while in labor-intensive production it is on the increase. This requires specific approaches to be carried out gradually: by implementing automated production in the rubber plants, modernization in fiber plants, and full automation in the small scale production plants in preparation. At the same time, we shall have to reevaluate our research and design operations and new capital investment. This requires special concern in the area of work planning. One cannot request new ventures to be unincorporated in the plan and underestimate the need for workers, or argue that none will be needed after an expression only to request them later on the grounds that this is a new venture which needs people.

The situation regarding these savings is all the more serious insofar as the enterprises must economize still more through internal improvements, in order to carry out the social program, build up computer technology (which should bring additional savings) and for other things. All of this requires the creation of a standards base.

#### What We Must Do

Based on these circumstances, we clearly wish to implement the Shchokino method for reductions in personnel for the future periods. In the process, we must see that our enterprises incorporate these savings into the plan for subsequent years, that 100 percent of the wages payable are gained, and that a portion of it is used to cover the obligatory savings in personnel.

I was on a study trip to the Soviet Union, in Novopolock, where the Shchokino method is in force. The method has spread throughout the Soviet Union with the principal goals--to achieve savings in personnel and increase labor productivity. There is space enough not here for a detailed description of the individual methods. I only wish to say that we intend to carry out this method in our country within the context of Slovchemia.



We held a seminar to address the problems of wage policy. A portion of it was also devoted to a program for carrying out the Shchokino method. We worked out methodological directives and sent them to the chief economists. We wish thus to verify and use the tools of management aimed at fulfilling the planned objectives in the requisite quantity and quality with a smaller number of workers and better labor productivity. Constant focus upon intensification, above all on the basis of socialist efficiency, is the most effective method to achieve maximum efficiency and quality concentrating on:

- taking advantage of science and technology,
- the use of new scientific ideas and technological solutions,
- the most efficient utilization of all elements in the manufacturing process,
- stimulating the initiative of researchers and innovators,
- introducing the scientific organization of work.

The aim of economic management is to conduct a thorough analysis of the needs of the workers. As we expand this to our conditions in all plants and simultaneously set goals and methods of reducing the number of workers, dividing them into short-term goals which can be realized quickly, and long-term ones in which, in addition to having to learn the profession, will require learning technical solutions as well. There is also a need to establish a program for [learning] technical solutions. Rationalization activity should above all aim at:

- an increase in production lines,
- expanding the scope of management,
- simplification of organization and administration,
- increased use of computer technology,
- concentration of the systems of transport, laboratories, and the like,
- ensuring reliability in the equipment operations,
- an improvement in the quality and organization of maintenance and in repairs with warranties and of all other activities which will enable us to increase labor productivity.

One must include among the important measures those which touch upon the improved times utilization in the shift work by keeping to actual starting and ending times and breaks and abiding by the rules on leaving the job site and methods for the organized supply of materials, and the like.

In order to realize these requirements, it is not possible to merely give orders from above. The employees must be won to action, not only by developing their initiative, but primarily through a system of wage incentives.

This field is very broad and, therefore, I shall introduce only the most important points.

The essential part of the resources for savings must go to those workers who assume higher goals. Bonuses may be set up to 30 percent of the pay rates not only of the workers who assume the work, but also in the pay of technical and supervisory personnel and unskilled labor as well. This increase can go up to 50 percent for jobs which are exceptionally demanding and physically exhausting.

Bonuses up to 30 percent can be established for foremen and supervisors in whose shops a reduction in the number of employees take place. Further, one-time awards to workers and to technical and supervisory personnel for working out and implementing measures which ensure a reduction in the number of workers and a greater increase in labor productivity than called for in the plan.

A system of incentives for maintenance workers also is needed, especially by carrying out guaranteed repairs and cross-training machine operators in maintenance.

The specific details of a system of economic incentives will have to be based on required savings and the need for internal rationalization, especially for carrying out the social programs and the just distribution of gained wages among all those who contributed to the savings.

At the same time the principle that bonuses are paid only when the planned objectives are met in all quality indicators, while maintaining production and safety during the work.

Prior to the implementation of the Shchokino method itself, one must ensure that the production process can operate with the reduced number of employees. This means cross training workers to master other jobs in the plant, to broaden their areas of responsibility and train them for types of work in all areas of production.

I have introduced here only suggested routes for carrying out savings in personnel in order to improve labor productivity in order to meet a whole series of objectives explained in the Set of Measures and which directly affect increases in efficiency, cost reductions streamlining of work and a system of economic incentives. They are also of concern to research and development and the formation of the principles of the scientific organization of work.

Success in implementing the principles outlined above will not be automatic. It will depend upon the personal involvement of the management, the initiative and activity of the trade-unions and the activity of the party functionaries. The result of our work should lead to a further increase in productivity and growth in our national income.

3290

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## MACHINERY EXPORTS BY CSSR CRITICIZED

Prague JEDNA MECHANIKA A OPTIKA in Czech No 4 Apr 81 pp 85-87

[Article: "In the Atmosphere of the 16th CPCZ Congress"]

[Text] We completed the Sixth Five-Year Plan and have now entered the period of the Seventh Five-Year Plan. It is the period in which we in the engineering sector should reflect upon how we have fulfilled the tasks assigned to us by the 15th CPCZ Congress and, since the engineering sector departed in certain respects from the congress directives, analyze the causes and make conclusions for the future development. For this reason, we shall in a series of articles cite certain facts on the development of the engineering sector, examine the correctness and purposefulness of the structure of the engineering sector, try to characterize its planned development during the 1981-1985 period and propose some structural changes to be carried out during the next period. We shall also analyze in detail the tasks assigned to us by the 16th CPCZ Congress.

It would be desirable if certain facts mentioned in this article would be studied by the mechanical engineers from the plants and particularly by those who will be working in the next few months on the long-range forecasts of the development of the engineering sector up to the year 2000, forecasts which should be completed prior to 1983. This is one reason. The second reason is that we should evaluate the just completed Sixth Five-Year Plan not from the standpoint of whether the plan was fulfilled or not, but in order to demonstrate that it represented quite definitely an end of the period in which our engineering sector could ignore world trends and assume that everything it manufactured would be readily sold--if not for exports, at least in our own country, where the investor-consumer had to take what was offered to him because he had no other choice. We do not want to assert, however, that the quality and standard of our engineering products is generally bad, but certain facts are merciless. At one of the recent plenary sessions of the CPCZ Central Committee, Comrade Strougal stated that the criterion of the world market was the only correct criterion of our engineering sector as well as of our entire national economy. And the world market says this: while world exports of machinery reached the annual rate of approximately 20 percent in the last 10 years, the CSSR rate was only 14 percent and to the nonsocialist countries only 13 percent. Moreover, Czechoslovak exports to NSZ [nonsocialist countries] virtually stagnated during the 1978-1980 period.

Another fact says that we received approximately \$1.02-1.77 for one kg of machinery exported to the industrially developed capitalist states during the 1965-1976 period, while the West European countries received on the average \$1.74-4.73 and American firms \$3.05-7.82. What is alarming is not so much the difference in the absolute level, but the price increases. While the prices of Czechoslovak engineering exports increased to the index 174, the West European firms increased their selling prices to the index 273 and American firms to 256 during this 10-year period.

It is not necessary to emphasize that the market of these industrially developed countries is the price criterion not only for sales to other capitalist states, but also--though with a certain time lag--also for the market of socialist countries.

We can thus say that the Czechoslovak engineering sector in its exports not only to the nonsocialist, but also to the socialist countries could receive as much as \$2.50 instead of \$1.00 for every kilogram of exported machinery, if we had received at least such prices as are attained by West European firms.

This means that since we exported to the entire world machinery worth approximately \$5.6 billion in 1978, we could have received for it \$14 billion, or, calculating on the basis of the metal content, we could have exported 2.5 times less and still have earned \$5.6 billion.

Naturally, there is no single cause for this situation nor are these new facts which are not already known to the higher-ups in much greater detail than it is stated here.

Although the lower technical-economic standard of our products is the principal cause, it is not the only cause.

Discriminatory measures on the markets of industrially developed capitalist countries are not inventions of propaganda. It is known that, for example, the United States will not grant the most-favored-nation clause to our merchandise although we have signed the GATT agreements. For this reason, the U.S. importers must pay a higher import duty on Czechoslovak merchandise and we must reduce the price.

The main world markets are dominated by the huge engineering monopolies: FRG machinery exports amounted to \$67 billion (in 1978), of Japan to \$55 billion, of France to \$28 billion, of Great Britain to \$26 billion, of the United States to \$60 billion, while the CSSR exported machinery worth only \$0.5-0.6 billion to the markets of developed capitalist states. This automatically puts us into the role of the "weaker partner on the market" generally and with a few exceptions (tractors, machinery for the textile industry) also in regard to individual commodities.

In terms of commercial policy, this means that we usually get in touch not with the strongest, but the weaker importer on the respective market--with all the negative implications (he usually demands discounts, better [for him] credit terms, requires different prices for medium-size and small producers, and so on).



Another reason is inadequate market research. Our producer usually does not have the "back door" open to the investor's kitchen regardless of whether the investor is a private company or government. He does not have any possibility of learning about these intentions before they are made public either because he cannot or does not know how to obtain the pertinent information. The ultimate result is the same however: the capitalist producer enjoys always an advantage over our producer.

Certainly, the traditional knowledge of the market in question in which the capitalist firm has been firmly established for a number of years also plays its part. The capitalist firm maintains relations not only with the ruling class of capitals, but also with the national bourgeoisie of the third world. That the new ruling circles of former colonies would place orders with us simply because we are a socialist country happens only exceptionally, when the new ruling circles are exposed to extreme pressure by the imperialist forces and try to counteract it.

We quite deliberately lay aside very important questions in this area, such as the subjective abilities of our foreign trade workers about which conflicting views are frequently expressed. In our considerations, we must assume that our foreign trade workers are as good as our competition is.

There is thus, in our opinion, one fundamental cause to be traced to many factors and that is that some of our products have lower technical-economic standards than the products offered by the best foreign industrial firms.

It is a fact that the above-mentioned nontechnical causes cannot be underestimated because they depress the prices of our products, though by only a few percent. They cannot, however, explain the considerable differences in selling prices. While the Czechoslovak manufacturer receives only \$1.5 for one kg of exported tractor, the West German manufacturer receives \$3.2, the French manufacturer \$2.9, the Austrian manufacturer \$3.7 and the Swiss manufacturer \$4.0. The Czechoslovak seller received for one kg of car \$1.7, the West German \$4.6, the French \$3.6, the Austrian \$7.0 and the Italian \$3.4. A similar situation prevails in regard to trucks, where the difference between the price gotten by Czechoslovak trucks and the highest selling price (of an Austrian truck) is 350 percent. On the other hand, the differences are not so great with reference to those products where we belong among the technically most progressive manufacturers. If we take the Czechoslovak price as 100, then we obtain the following series:

Price of Czechoslovak textile machinery	FRG	Italy	Belgium	Netherlands	G. Britain	Sweden	Swiz.
100	160	115	89	99	115	106	173

Is this not proof that outstanding technical standards open markets? On the other hand, the reality of the 1978-1980 period, when the Czechoslovak manufacturer was slow in placing production innovations on the market demonstrated that lagging behind means a retreat from the market and deterioration of price relations.

Yes, this is quite logical. Four agencies independently evaluated the technical standards of Czechoslovak engineering sectors 4-5 years ago. All of them came to the conclusion that only about 15 percent of engineering sectors were of the highest standard and that no more than 35 percent of sectors could achieve this level by their own VVZ [research and development base] within the economically relatively necessary time of 3-4 years.

Let us examine now whether export expansion is not held back by inappropriate sectoral structure. Naturally, we interpret export expansion as the need to export machinery to both territories of the world in order to achieve the highest possible surplus balance. It is necessary to say a few words to this problem. Our experts in the engineering sectors often think that they already are doing enough and that other sectors of the national economy should also contribute by their exports to the production of the generally larger surplus balance. Wishful thinking alone, of course, will not help because the economic realities are:

-- although the agriculture-food industry complex could eliminate imports of grains, meat and so on, if the grain harvest reaches 11-12 million tons, but it cannot do without imports of potash fertilizers, special herbicides, insecticides, fish flour, animal proteins, oil plants, oranges, bananas and so on. In other words, it would always show a deficit, although the present deficit would be reduced. It will never be able, however, to achieve an export surplus;

-- metallurgy of ferrous and nonferrous metals. It is perhaps known that ore accounts for only 5 percent of the batch in production of pig iron and that our own production does not cover more than 10 percent of our nonferrous metals consumption. The prospects are rather worse than better. And perhaps everybody will recognize that to effect only those exports of metallurgical material which will produce an absolute surplus balance is economically incorrect;

-- if our chemical industry takes into account that we import approximately 20 million tons of crude oil and petroleum products annually worth approximately Kcs 26 billion (and they will gradually become even more expensive), then this raw material could be hardly paid for by any export of chemical products. It will take at least 10 years before imports and exports are balanced. Under no circumstances, however, can our chemical industry attain an export surplus;

-- in the area of the fuel-energy complex, we already have deficits in both exports and imports. A smaller export of coking coal equals the deficit in the imports of raw materials in short supply--potassium salt, coal, electricity, fuel elements for the nuclear power plants. True, we also export uranium concentrate, but even so the area of fuel-energy raw materials will not only never produce a surplus balance in exports, but will register a steadily increasing deficit;

-- there remain only two sectors which produce and can produce a foreign-trade surplus, finance imports and make possible reproduction in the national economy: the consumer and engineering industries. The consumer industry to some extent has domestic raw materials, timber and raw materials for the glass industry. As to the lumber industry, it is a seeming paradox that our exports are the more profitable, the less processing costs the product contains; in other words, it is best

to export timber "at the stub." And this is precisely what we do sometimes. The export of glass merchandise is profitable when it consists of artistic processing of glass substance, but less profitable in the products which are mass produced. Anyway, however, this export is virtually irrelevant from the economic standpoint.

Although the export of textiles and shoes is very important for the balance of payments with both territories of the world, it nevertheless has its limitations regardless of the fact that it requires considerable imports of raw materials, preparations and so on from the capitalist markets. Moreover, this is merchandise in regard to which the competition of economically less developed countries will be increasingly felt because they have both the necessary raw materials and cheap labor. Hands off such exports!

In view of this situation, only engineering remains. It produces a yearly surplus of \$1.8 billion in the balance of payments and this surplus doubled in recent years. On the other hand, in our trade with the industrially developed countries we have registered a considerable deficit in contrast to the general balance 10 years ago. For better illustration: the above-mentioned 20 million tons of crude oil and petroleum products cost us approximately Kcs 26 billion. This means that the import of crude oil reduces the surplus produced by the export of engineering products by approximately two-thirds and only one-third remains for the purchase of other raw materials, grains and food.

Everyday practice makes it clear that the foreign-trade surplus balance produced by the consumer goods and machinery is not enough, and the Czechoslovak balance of payments, particularly with industrially developed capitalist states, is permanently in a danger of slipping into deficit. It is obvious that we need more exports. It is necessary to see that Czechoslovak exports, though not small, are by no means excessive with reference to production potential. This becomes evident when we compare the production volume with our exports to the entire world. While the world engineering production was increasing at the average rate of 5.8 percent in the last 10 years, Czechoslovak engineering production achieved growth rates which considerably surpassed this average. Yet, while world engineering exports were increasing approximately 20 percent annually during this period, Czechoslovak engineering exports were increasing only at the annual rate of 14 percent. In 1980, Czechoslovak exports accounted for 28.6 percent of domestic engineering production, but the corresponding ratio was 70-85 percent for the Netherlands, Austria and Belgium, and 55 percent for Sweden and Italy. The value of exported machinery per worker in the Czechoslovak engineering sector amounted to approximately \$5,000, the corresponding figures were \$23,000 for Sweden, \$19,000 for West Germany, \$14,000 for Austria and so on. Only the United States, which essentially is an autarkic big power, shows a relatively small volume of exports in relation to total production.

It is clear from the above that our engineering exports are insufficient. This is due primarily to the two facts:

-- the high share of domestic capital investment in the national income automatically establishes strong ties between the "engineering sector and needs of this capital construction, if the imports of machinery" necessary for this capital investment are small;

-- small participation of the engineering sector in the international division of labor does not result in the large exchange of machinery, because other socialist countries also pursue an autarkic policy.

In other words, whether we look at it from the standpoint of Czechoslovak national economic needs or from the standpoint of absorption capacity of both markets of the world, the export potential of our engineering sector is small.

It is necessary to ask why this is so. Essentially only three reasons for it can exist:

-- the structure of Czechoslovak production and thus also of exports is not satisfactory, or

-- the production structure is satisfactory, but its capacity in the sectors which must meet both domestic capital investment and export needs is inadequate, or

-- the effects of the faulty production structure and of inadequate capacities are multiplied by the lower technical-economic standard of products.

First, a few words about the production structure. In our opinion, a structure which corresponds to the needs and wishes of the consumer is correct. We have already said that our capital investment is too high in relation to the national income and a large percentage of it must be taken care of by the Czechoslovak engineering sector. The engineering sector usually supplies approximately 70 percent of the machinery for capital construction and only the remaining 30 percent are covered by imports approximately equally split between the socialist countries and KS [capitalist states]. These deliveries for capital investment account for approximately 18-19 percent of total engineering production. Moreover, the engineering sector exceeded in this respect the guideline for the Sixth Five-Year Plan by approximately Kcs 16-17 billion VC [at wholesale prices]. To a considerable extent, this was backed up by the subsequent decisions, such as on strengthening of the fuelpower base by the reconstruction of boilers and other equipment for power plants. This makes it clear that:

-- there is great pressure on capital construction which is convenient for both parties concerned--investors who have enough funds for capital construction and the engineering sector, which is very glad to make deliveries to capital construction and particularly to those capital investment projects to which the managing organs do not pay too much attention (that is, to the construction projects with RN [budget expenditures] below Kcs 2 million;

-- the structure of deliveries and the structure of requirements in the area of decentralized capital construction essentially meets the wishes of both parties;

-- capital investment was undervalued by the central organs already in the plan because the center was not able to keep centralized capital construction within the original limits set by the Sixth Five-Year Plan, and actually approved them in the annual plans.



From all this, we can make the following conclusion: so long as the investments are provided for in the plan and claim a high percentage of the national income, the engineering sector will always give priority to deliveries in this area rather than to export shipments.

Let us look now at the basic, so-to-say macrostructural composition of the Czechoslovak engineering sector. This is and will also unquestionably remain in the future the role of the electronics industry in the entire engineering sector.

Experiences of industrially developed countries confirm that the modern national economy cannot be developed at all without a modern electronics industry. Unfortunately, although electronics and telecommunications industry existed in the prewar republic, the modern electronics industry has not yet reached a level in the CSSR which could match this industry in the industrially developed countries.

This, however, will be the subject of our next article.

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CSO: 2400/212

## NEW REGULATIONS ON ENERGY USE, MANAGEMENT EXPLAINED

### Legal Expert's Discussion

Leipzig ENERGIEANWENDUNG in German Vol 30 No 2, Mar-Apr 81 pp 39-43 manuscript received 12 Jan 81

[Article by Dr Wolfgang Weineck, legal adviser, Ministry for Coal and Energy, East Berlin: "The Energy Decree of the 1980's" Translation of the official texts of the 1980 Energy Decree and its First Implementating Regulation follow Weineck's discussion]

[Text] The GDR Council of Ministers on 30 October 1980 adopted the (new) Decree on the Energy Economy in the German Democratic Republic--Energy Decree<sup>2</sup>. It took effect on January 1981 and at the same time cancelled the 9 September 1976<sup>3</sup> Energy Decree and the 8 November 1979<sup>4</sup> Second Energy Decree.

In terms of its system and its content, the 1980 Energy Decree is consciously and deliberately so designed that the overwhelming majority of the legal principles applicable until now will be retained. The regulations were supplemented or amended to the extent that the development of energy-industry conditions for the GDR and the altered organizational structure of the coal and energy industry since the autumn of 1979 had already necessitated new government decisions or since new decisions were to be made as a result of the adoption of this decree. By the way, analysis has shown that the overwhelming majority of the legal principles meets the coming requirements. The month during which the coal and energy industry was most severely burdened in the winter of 1978-1979 were a testing ground for that.

### Overview of Amendments

Combined into groups, we can list the amendments in the 1980 Energy Decree compared to the predecessor as follows:

Precise indication of the area of applicability in terms of personnel relating to citizens and armed agencies;

Inclusion of liquid gases into the technical application area, specific indication of the subjective application area relating to the installations of equivalent fuels;

Inclusion of basic requirements regarding the utilization of energy yields in the national economy;

Conversion of balance sheet segments for energy sources to quotas;

Inclusion of planned output production through listing of temperature steps in the energy decree;

Justification of competence of the Ministry of the Construction Industry for drafting heat consumption standards;

Inclusion of basic energy requirements regarding the import of energy conversion and energy application plants;

Perfection of the method for the decision on energy source use and the effects of decisions;

Inclusion of the basic regulation on the drafting and expert examination of separate energy segments of assignments and documentation pertaining to basic decisions for particularly energy-intensive investment projects;

Replacements of the functions of the Energy Supply VVB and the State Coal Office, both of which suspended their economic activities on 30 September 1980; general use of the term "energy combine" since these economic units will be directly under the minister of coal and energy as of 1 October 1980;

Specific determination of regulations on energy inspection and special energy industry control;

Specific determination of complaint proceedings regarding the decisions included here and the competence of the energy combines;

Perfection of the list of actions which can be prosecuted as disciplinary violations, separate regulation of disciplinary violations for which citizens can be called to task; inclusion of a simplified method for the determination of fines.

A direct comparison will show that, out of the 39 articles contained in the 1976 (1979) Energy Decree, 149 paragraphs turn up again in the new energy decree,

110 paragraphs show no amendment whatsoever (in other words they are identical) and they account for 73.8 percent,

Six paragraphs merely reveal a change in the address of the related legal regulation or show a new term, such as energy combine, energy inspectorate, energy inspector (in other words, they are almost identical), giving us another 4.0 percent.

Explanatory comments seem useful in connection with some of the amendments here.

**Inclusion of Liquid Gases**

Liquid gases have become increasingly significant in recent years for the GDR energy industry, especially as sources of concentrated hydrocarbon compounds with which

the raw gases, developing in the course of brown-coal pressure gasification, can be raised to city gas quality levels. This is the main reason why liquid gases had to be included in the regulatory mechanism of energy planning, energy plan accounting, quota systems, the decision on energy source use, efficient energy conversion and application.

The simplest solution for inclusion was used in the Energy Decree. The final provisions (Article 37, Paragraph 1, Subparagraph 1) states that the regulations for liquid fuels, contained in the decree, also apply to engine fuels and liquid gases, unless the decree specifies otherwise<sup>5</sup>. That applies also to the Implementing Regulations, especially the legal definition for energy sources in Article 1, Item 6, of the 1st DB [Implementing Regulation]/EnVO [Energy Decree]<sup>6</sup>.

The energy law did not provide any concept definition for liquid gases. Definition 1.1.6., of TGL [GDR Norms] 190-379/01<sup>7</sup> applies: "Gas mixture, primarily consisting of  $C_3C_4$  hydrocarbons, to be liquefied for pressures of up to 25 kp/cm<sup>2</sup> overpressure and at room temperatures and that contains at most small parts of methane and meets the requirements according to TGL 3073."

#### Inclusion of Basic Requirements for Energy Yield Utilization

The GDR's primary energy balance sheet urgently requires relief. This must and can be done in several ways. The national economy's capacity may not be reduced and the level attained in supplying the population must not be lowered. One way involves the planned and comprehensive utilization of the energy yield. This was turned into a legal obligation of the combines, enterprises, and producer cooperatives (enterprises within the meaning of Article 1, Paragraph 1, Sentence 2, EnVO). The establishment at which the energy yield materializes is obligated to use it (Article 4, Paragraph 2, Sentence 1, EnVO). If the establishment itself cannot use it, it must pass the energy yield on to other energy customers who can use it with an expenditure that can be justified in terms of the national economy (Article 4, Paragraph 2, Sentence 3). Utilization requires a scientific-technical, installation-engineering, personnel, and financial effort. World market prices on energy sources, which have been rising increasingly in recent years and the procurement conditions for such energy today cause the expenditure, justifiable in terms of the national economy, to appear in a different light when compared to the situation several years ago; this has caused a change in the proportions involved. Nevertheless, we must not disregard the expenditure and efforts; they will play a role when selections are to be made as to the sequence in which the possible solutions are to be included in planning--from the top down and the other way around. Article 4, Paragraph 2, Sentence 2, EnVO, therefore demands that economically justifiable solutions be worked out in energy yield utilization<sup>8</sup>.

The basic requirements for energy yield utilization are aimed not only at operators of energy conversion and energy utilization plants. The 1980 Energy Decree also spells out the general list of duties of plant builders and their higher agencies, as explained earlier<sup>9</sup>. Plants for energy conversion and use are to be so planned, designed, and built that the energy yield can be used with an expenditure justifiable in terms of the national economy (Article 4, Paragraph 4, Subparagraph 8, EnVO) that is, from the beginning, not only with later technical-technological completion.



Energy law did not define the energy yield. Definition 1 in TGL 31727/01<sup>10</sup> applies here: "Energy which is developed in energy processes and systems as unwanted by-product. They consist of components of utility energy<sup>11</sup> and energy losses<sup>12</sup>."

### Energy Source Quota System

According to the legal definition in Article 1, Paragraph 11, 1st DB/EnVO, a quota is the obligatory, government-determined maximum limit on the permissible procurement ("procurement" quota) or consumption ("consumption" quota) of energy sources for annual, quarterly, or monthly intervals or the permissible use of electric energy, gas, or thermal energy for certain specific intervals of time of, in each case, § 1 d ("output" quota). For other raw materials, materials, and equipment, we continue with the balance sheet part. During the phase of preparing the five-year and the annual plans, balance sheet parts will continue to be specified for energy sources. The Energy Decree reveals that only in Article 4, Paragraph 4, Subparagraph 3, and as for the rest this emerges from the planning regulations.

The Energy Decree and the pertinent implementing regulations have been geared to the new quality of the quota system. That concerns the previously mentioned assignment of the appropriate government agencies and economy-managing agencies as well as the energy consumers in connection with energy planning (Article 4, Paragraph 4, Subparagraph 3, EnVO; Article 4, 1st DB/EnVO), output shares (Article 9, Paragraphs 3 and 4, EnVO; Article 16, Paragraph 2, 1st DB/EnVO), economic penalties in case of impermissible energy consumption (Article 9, Paragraph 5, EnVO; Article 20, Article 21, Paragraph 2, Sentence 2, 1st DB/EnVO) as well as the special energy-industry control procedure (Article 28, Paragraphs 1 and 2, EnVO).

In spite of the quota system for the output as such, the output portions for electric energy and gas were retained and were even extended to thermal energy. The reasons why this was done are still timely. The output share remains the component of the energy supply contracts for the particular interval of time. In the future it will therefore not be necessary for the contracting parties (energy customer and energy combine) to agree on the output (output availability at the transfer point leading to the customer's system). The very low-cost method of including supplementary agreements for the energy delivery contracts that basically apply for an undetermined period of time, was retained. As in the past, the "output" quota, determined by the appropriate capital asset operator for the specific energy consumer must be examined to find out whether the output can be transferred to the customer's plant and there is still authority to set the output share smaller than the "output" quota, provided transferability is not guaranteed. This authority is all the more important since we are not concerned here only with the dimensioning of the particular connecting plants but also with the transferability of the prepositioned supply network. Besides, during earlier years, on the basis of or in consideration of the performance shares, a large number of other regulations was issued, for example, rate schedules and prices for energy sources, methodological determinations and other instruments for planning, plan implementation, and plan accounting. To gear all of them toward a change in the procedure would have cancelled out past practice pursued over many years, would have meant a loss of effectiveness, without creating any new utility.

The conversion to the quota system also necessitated amendments in the regulations which serve for the implementation of Article 9, Paragraph 5, EnVO. The "consumption" quotas relate to all energy sources covered by the objective area of applicability of the Energy Decree, specifically, electric energy, city gas, natural gas (GDR yield and imports), energy and cokable hard coal, foundry smelter coke, blast furnace and industrial coke, raw brown coal (rough coal, slack coal, and sifted coal), brown coal briquettes, brown coal combustion dust, brown-coal low-temperature coke, medium-temperature coke, high-temperature coke, engine gasoline, diesel fuel, heating oil, and liquid gases. Article 20, Paragraph 1, 1st DB/EnVO, specifies: so long as or to the extent that no "consumption" quotas have been issued for thermal energy, the standard figure for the quantities of permissible consumption are determined by the quantities agreed upon in the light of the permissible room air temperatures in the energy supply contracts.

The change in the organizational structure of the coal and energy industry also made it necessary to alter the competence of the capital asset management establishments in dealing with energy customers who are not obligated to prepare energy plans. The tasks connected with the status of capital asset management establishments relating to electric energy, gas, and thermal energy as well as solid fuels are now to be taken care of by the appropriate energy combine while with relation to heating oils, liquid gases, diesel fuel for production purposes, and other services, this will be taken care of by the VEB Combine Minol. These capital assets management establishments must break down the quotas over the energy customers in coordination with the bezirk council (Article 5, 1st DB/EnVO).

#### Temperature Steps

The planned output reduction through call-up of temperature steps (PLR [Planned Output Reduction] steps) was inserted into the electric energy supply concept on the basis of and in the context of the resolutions of the Council of Ministers first of all in the form of Method 2--Supply Steps, issued on 27 November 1979<sup>13</sup>. In drafting the new version of the Energy Decree, it was necessary to include the temperature steps in the decree, the prerequisites and legal effects had to be regulated expressly, and they also had to be distinguished from the cancelled [temperature] supply steps.

All types of steps share one feature and that is that they take effect after call-up of the competent operational management organ, after decisions according to Article 3, Paragraph 5, EnVO have been obtained or made (Article 12, Paragraph 1, EnVO) and after they obligate the energy customers included to restrict energy consumption during the time of effectiveness of the call-up in accordance with specific requirements (Article 30, Paragraph 1, Sentence 2, Item 2, and Paragraph 2, Article 31, 1st DB/EnVO). While the PLR step can be decided upon in connection with considerably more negative deviation of the outside air temperature from the long-term mean values, a temperature supply cancellation step may be ordered if requirements cannot be met temporarily through the use of available [energy] generation output and other yield sources. The most important differences emerge in terms of the legal effects. If a temperature supply cancellation step is called up then the energy combine is objectively violating its delivery obligation as it arises from the energy supply contract; according to the rules of energy law (ELW [Electric Energy Delivered to the Economy]<sup>14</sup> and ELB [Electric Energy Delivered to

Population]<sup>15</sup>) and the contract law or the ZGB [Civil Code] it can however obtain exemption from the legal consequences of liability<sup>16</sup>.

If a temperature step is called up, there is not contract violation; instead, according to Article 12, Paragraph 2, Sentence 2, EnVO, the output shares are blocked as a function of the limits (which are determined for individual steps and individual consumers in the form of written rulings, as per Article 30, Paragraph 1, Sentence 1, in conjunction with Article 31, 1st DB/EnVO) and the delivery claims of energy customers as well as the delivery obligation of the energy combines and other energy suppliers are amended within the effective provisions of the contract. The new energy decree thus authenticated the views presented in the interpretation of the law<sup>17</sup> although in terms of the area of effectiveness--as well as the area of the temperature steps as such--it also extended this to the energy source groups "gas" and "thermal energy."

In view of this, temperature steps, in each case, through call-up of the competent operational management organ, do constitute mandatory targets which take effect for a comparatively short time, which block a portion of the otherwise permissible maximum output utilization, and which reduce the delivery claims of energy customers and the delivery obligation of energy suppliers with the force of contract effectiveness; these target requirements are designed to neutralize the effects of an outside air temperature curve--negatively deviating from the balance sheet calculation figures--upon the actual output utilization figures among the totality of all energy customers, thus affecting the stability of the particular energy supply system.

The contract fine regulations in the ELW needed to be neither supplemented nor amended. Government discipline can be tightened up through very effective penalties:

The blocking of the output share reduces the specific target figure which, if it is exceeded, means a contract fine according to Article 43, Paragraph 2, Item 2 (1 m/kw an hour) or Article 44, Paragraph 2, Item 1 (50 Pf/m<sup>3</sup> [Pfennig per cubic meter] of the quantity involved) or Article 45, Paragraph 2, Item 1 (40 m/Gcal an hour). This at the same time balances out the lump-sum economic disadvantages which arise for energy suppliers from law and contract violations;

The reduction of delivery claims and obligations also has a proportionately diminishing effect upon the "consumption" quota. The temperature step has an effect upon the calendar day and must therefore also be expressed in a reduced use of energy. In contrast to the ratio between the output share (time) and the daily energy quantity, the equalization is possible here via greater output utilization during no time period on the particular calendar day. The violation of the reduced "consumption" quota consists of a fundamentally impermissible use of the quantity involved which calls for economic penalty in the form of ten times the average industrial sales price for the energy source (Articles 20 ff., 1st DB/EnVO). See below for temperature steps which take effect on account of the disciplinary law consequences deriving from failure to comply.



## Decisions on Energy Source Use

Regulations on the reporting of energy requirements, on decisions regarding energy source use, the legal effects of the decisions, as well as on requirements imposed in connection with the decisions on energy source use<sup>18</sup> have been perfected.

Mandatory reporting has now also been extended to the requirements for liquid gases, specifically if the annual requirement exceeds 1 t (Article 1, Paragraphs 1 and 2, 3rd DB/EnVO<sup>19</sup>) or, without any quantitative limitations, if the liquid gases are to be used in fixed space heating systems (Article 1, Paragraph 3, 3rd DB/EnVO). The space heating version of the reporting obligation also applies to citizens; equipment that can be used and is used for camping purposes is not covered by this mandatory reporting provision.

The 1976 (1979) Energy Decree specified that approval by the competent energy-industry agency is a prerequisite for the inclusion of the project in the plan. Article 17, Paragraph 3, Sentence 1, EnVO, expressly expanded these effects to include the start of project planning (Item 1), the material and financial balancing of the energy sources and the equipment for the particular conversion and utilization plants (Item 2), the procurement of import offers or the initiation of business relationships for the import of conversion and utilization systems (Item 4; here it is necessary to consider the connection with the newly added Paragraph 6, Article 15, EnVO, and with Article 4 f, 2nd DB/EnVO<sup>20</sup>). It seems particularly urgent to stress the repercussions of Item 2 upon the quota system. The regulation among other things means that energy consumption in the particular system constitutes impermissible consumption within the meaning of Article 9, Paragraph 5, EnVO, in conjunction with Articles 20 ff., 1st DB/EnVO, specifically also if the consumption of the particular energy source remained within the limits of the "consumption" quota assigned by the capital assets operator<sup>21</sup>. The concept "material balancing" in the legal provision is to be so understood that it sets up requirements for all legal subjects who are involved in the balancing process. The point of departure is the duty violation of the energy user; he cannot claim that it was not challenged by the capital assets operator during energy planning; he cannot claim that the quota somehow "heals" the duty violation; as for the rest, he cannot argue that the allocation of quotas to individual processes and energy systems is within the decision-making purview of the energy customer. If the duty violation is not discovered in the course of evaluating and confirming the energy customer's energy plan, the capital assets operator will experience serious weaknesses in production and energy planning. The standards used do offer a certain leeway which is in crass contrast to the criteria demanded. Through his quota allocation, the capital assets operator does not cancel out the impermissibility of energy use without the needed utilization decision or contrary to the utilization decision that has been issued. Such a case of impermissible energy use will hardly become recognizable through government reporting procedures, such as the fundamental violation of obligations arising from Article 17, EnVO. Law violations of this kind are regularly discovered through the supervisory activities of the energy inspection agencies and the energy combines in accordance with Articles 25-28 EnVO, and the 4th DB/EnVO<sup>22</sup> or the agencies of the worker-and-peasant inspectorate.

Paragraph 4 has now been inserted into Article 17, EnVO. Accordingly, the energy user is obligated immediately and in writing to report to the competent energy



combine that the energy plant, which was erected in agreement with the energy-industry permit, is ready for operation (termination of construction and installation work). The actual energy source utilization procedure thus is placed under firmer control. Sentence 2 in the regulations moreover introduced an expiration period for permits. The permit, once issued, loses its validity 1 year after the commissioning date mentioned therein if the energy plant has not yet been placed in operation by that time. If the permits have become invalid for this reason, the (potential) energy customer is in the same situation he was in before he reported the energy need to the competent energy combine. If the project is to be carried out in spite of the delay or--assuming that the process is already underway--if it is to be completed, the investment client or other customer must repeat the energy need reporting procedure. The competent energy-industry agency can and must in such a case issue a renewed decision. The decision can:

Adopt the earlier decision which has become invalid, in terms of the content, with the exception of the commissioning deadline, or

It can amend it in terms of content beyond the commissioning deadline as such, particularly also with a view to the energy source to be used, or

It can deny the permit, that is to say, it can allow neither the previously permitted nor any other energy source.

If the decision is affirmative, it may be connected with certain specific requirements which must be commensurate with the overall conditions connected with the interval of time that can be surveyed at the time the decision is made.

The basic rule concerning amendments in energy source utilization decisions was taken over from the implementing regulations in Article 17, EnVO, in the form of Paragraph 3, in keeping with its greater significance. Reference is made to earlier descriptions<sup>23</sup> as far as the way in which this work is concerned.

#### Competence Regulation

On 30 September 1980, two economy-managing agencies, mentioned by name in the 1976 (1979) Energy Decree, suspended their economic activities; they are the Energy Supply VVB and the State Coal Office. Their functions had to be transferred to other energy-industry agencies.

The energy combines almost in all cases became the successors to the Energy Supply VVB. Their responsibility for accomplishing the tasks of government energy policy in the territory was further enhanced, specifically as capital assets operators for solid fuels with a view to customers who are not subject to the energy planning obligation (Article 5, 1st DB/EnVO), as a control agency which is particularly concerned with the energy industry in terms of energy planning, obligations in connection with energy source use and compliance with requirements connected with the erection or major change in energy generation and energy transmission systems as well as structures in the hazard radius of energy transport systems.

## Energy Inspections

Until now, the persons who carried out the control functions of the particular inspection agencies were covered by the general term of "inspection agency officer"; to the extent that this was their full-time, primary occupation, they constituted a subgroup among the inspection agency officers in their capacity as energy inspectors. Article 25, Paragraph 5, EnVO, changed all that. A person who is supposed to check into the accomplishment of energy-industry tasks must be employed either as energy inspector, in other words, on a full-time basis, or as part-time energy inspector or--on the basis of Article 28, Paragraph 3, EnVO--as (full-time) energy control officer or as part-time energy control officer. In that same connection, the old concept of "inspection agency" was replaced by "energy inspectorate."

Important changes became necessary in connection with special energy-industry controls. A separation was again introduced between the echelons of the operational management agencies for electric energy in Article 28, EnVO; Paragraph 1 is now applicable only to the State Main Load Distribution [Division]. The same also applies to the State Main Gas Distribution [Division]. As for the rest, a comparison to the old Article 27a, Paragraph 1, EnVO, shows that, in the case of the object of these controls, the balance sheet shares were converted to quotas and that the temperature steps are included now.

The energy combine, as an agency of special agency-energy control, was given considerably broader tasks. They correspond to a more developed competence for complex-territorial energy supply. This new regulation however also had to make it possible to have special energy-industry controls directed in a complex fashion by the energy combine manager. He is the manager of the controlling agency; he assigns the full-time and part-time energy control officers; he issues the control assignments, to the extent that they are required and he spells out the requirements according to Article 26, Article 28, Paragraph 3, EnVO; Article 3, Paragraph 2; Article 11, 4th DB/EnVO. This authority cannot be delegated. Regardless of that however the combine manager can, in-house, assign to a technical manager the task of coordinating the control capacities made available in the various structural units of the energy combine, permanent technical guidance and control regarding full-time and part-time energy control officers, as well as the preparation of the pertinent decisions, ready for signature. Regulations regarding the replacement of the combine manager in case of his disability are not affected by this.

The functional control sphere of the energy combine is once again very much like what it was in the 1976 Energy Decree. Only rational energy conversion and utilization, the main area of energy inspection controls by the Central Energy Commission attached to the Council of Ministers, is not included (see Article 25, Paragraph 1, EnVO). The inclusion of energy planning in the object of control by the energy combine for example means this: is energy planning an object of management activity by the energy consumer (in other words, the party subject to control)? Are energy-industry norms and standards as well as requirements for energy source substitution used as basis in energy planning? What conclusions are being drawn regarding energy planning in terms of the revision of energy-industry norms and standards, for rationalization and reconstruction projects, as well as for the stabilization

or the guarantee of stability of the operation plants? This does not include in-depth checks on the quality of energy-industry norms and standards or the quality of measures connected with plant construction and operation, including the feasibility of those measures.

#### New Appeal Authority

The energy combines (in other words, state combines whose direct task according to plan primarily resides in supply energy customers in a region with electric energy, gas, and thermal energy from supply networks, as well as the other tasks assigned to them in connection with the implementation of government energy policy in the territory, as per Article 1, Item 7, 1st DB/EnVO) have since 1 October 1980 been directly under the Ministry of Coal and Industry. That considerably increased their own individual responsibility for management and planning<sup>24</sup>; on the other hand, the Ministry of Coal and Energy, without neglecting its specific tasks, could not have assumed the job of reviewing decisions for which the Energy Supply VVB was responsible before. Article 35, Paragraph 5, EnVO, therefore made the energy combines the first and second instances for selected decisions. Here they are:

Decision on the connection of a customer plant to the public supply network if there is a current supply obligation (Article 8, Paragraph 2, EnVO; Article 14, 1st DB/EnVO);

Decision on expansion of a connection plant of the energy combine if there is connection obligation (Article 8, Paragraph 2, EnVO; Article 14, 1st DB/EnVO);

Decision on the connection of a customer plant into the public supply network without supply obligations (Article 8, Paragraph 3, EnVO; Article 14, 1st DB/EnVO);

Decision on the expansion of a connection plant of the energy combine without supply obligation (Article 8, Paragraph 3, EnVO; Article 14, 1st DB/EnVO);

Decision on the (conditionally postponing) connection refusal by the energy combine (Article 8, Paragraph 4, Sentence 2, EnVO);

Decision on the (temporary) closing of the customer plant by the energy combine if the customer plant was found to be in violation of regulations during inspection (Article 8, Paragraph 4, Sentence 2, EnVO);

Decision on the connection of a third party to the customer plant which is already connected to the public supply network (Article 8, Paragraph 5, Sentence 1, EnVO; Article 15, 1st DB/EnVO);

Decision on the specific requirements for the toleration of land use for the connection of a third part to the plant of an energy customer who is not at the same time an owner or legal agent of the piece of land which is to be used jointly, said decision to be made by the energy combine (Article 8, Paragraph 5, Sentence 2, EnVO; Article 15, 1st DB/EnVO);

Decision on final laying of existing energy transmission system (Article 32, Paragraph 1, EnVO);

Decision on temporary laying of existing energy transmission system (Article 32, Paragraph 1, in conjunction with Paragraph 3);

Decision on approval to erect building structures in the hazard radius of energy transmission systems (Article 34, Paragraph 3, Sentence 1, EnVO; Articles 15 and 16, 5th DB/EnVO<sup>25</sup>);

Decision as to approval for major changes in building structures within the hazard radius of energy transmission systems (Article 34, Paragraph 3, Sentence 1, EnVO; Article 16, 5th DB/EnVO);

Decision as to specific requirements in connection with the erection of building structures in the hazard radius of energy transmission systems (Article 34, Paragraph 3, Sentence 2, EnVO);

Decisions in connection with the major alteration of building structures in the hazard radius of energy transmission systems (Article 24, Paragraph 3, Sentence 2, EnVO).

The first instance for decision is the (territorially) competent enterprise division of the energy combine or, if that should apply in each individual case, in its place, the management sector which is competent in subjective terms. As a rule, the decision must then also be signed by the particular manager, in other words, the manager of the enterprise division or the technical manager. The Energy Decree however does not rule out the possibility that management personnel might be authorized to make those decisions--and this is due to the large number of decisions to be made, decisions which are most closely tied to specific knowledge of local conditions.

The second instance, which makes the final decision on appeals, if the first instance did not fully process the appeal, is the manager of the energy combine. This authority cannot be delegated; it expresses the special personal responsibility of the combine manager to the minister of coal and energy; it alone made this possible. Regardless of that, the combine manager--as mentioned in connection with special energy-industry controls--may issue in-house rules. Here again this does not affect regulations on the representation of the combine manager in case of his disability.

#### Expansion of Area of Applicability of Delivery Possibility Confirmation

Article 7, Paragraph 2, Sentence 1, Item 1, EnVO, introduces the obligation to supply a certain energy source if, on the basis of Article 7, Paragraph 1, confirmation of delivery possibility (or connection and delivery possibility) was given. Article 13, Paragraph 1, 1st DB/EnVO, with a view to solid fuels, extended the past restriction of confirmation to coke (hard coal coke, brown coal coke, high-temperature carbonization coke, etc.) also to include hard coal in general.

#### FOOTNOTES

2. GBL [Legal Gazette], I, No 33, p 321.



3. GBL, I, No 38, p 441.
4. GBL, I, No 40, p 382.
5. This was not used in the EnVO, in the 1st DB/EnVO, Article 5, Paragraph 1; Article 8, Paragraph 1, Item 3; in the 3rd DB/EnVO, Article 1, Paragraphs 2 and 3.
6. 1st DB, 11 November 1980, GBL, I, No 33, p 330.
7. Gas plants; concept; technical concepts; issue No 10/72.
8. See also, for example P-J Hentschel, "On the Evaluation of Investment and Rationalization Measures for Energy Yield Utilization in Terms of the National Economy," ENERGIEANWENDUNG [Energy Use], 29, 1980, 4, p 138.
9. See also "Legal Requirements for Enterprise Energy Management," ENERGIEANWENDUNG 26, 1977, 4, p 127.
10. Basic concepts of energy industry; general concepts; edition No 7/77. A definition worked out for the energy sector runs along somewhat different lines: "In an energy, material, and shape changing process, substance-free and substance-bound energy yielded according to the laws of nature and technology in addition to the actual objective of the particular process, that is, energy which is basically still useful. It corresponds to the substance-free and substance-bound energy current which, in addition to the actual production goal, go beyond the balance sheet limits. It is identical to the external energy losses" ("Definitions and Concepts on Energy Byproduct Yields, Energy Byproduct Yield as Working Material," Article 3, IfE/ZRE, Dresden Area, 1979).
11. The energy which is directly used after the conversion of utility energy in energy use systems (for example, machinery, furniture, etc.) and which comes in a certain form, for example, mechanical energy, thermal energy, light (Item 29, TGL 31727/01).
12. Energy losses (in energy plants) are the difference between the energy supplied on the whole to a plant for energy use and the energy taken out of that. In keeping with the type of plant or plant group, in which the losses occur, they are broken down into conversion losses, application losses, transfer losses (transportation losses in case of electric energy, steam, gas), distribution losses (Item 8, TGL 31727/01).
13. MKE [Ministry of Coal and Energy] Special Reprint, in the meantime replaced by Method for Supply Concepts and Supply Steps, dated 25 December 1980.
14. AO [Order], 18 November 1976, GBL, I, No 50, p 555.
15. AO, 18 November 1976, GBL, I, No 51, p 571 in the version of the 2nd ELB of 2 June 1980, GBL, I, No 18, p 172.

16. See also "On the Entry into Force of New Energy-Law Regulations," WIRTSCHAFTS-RECHT [Economic Law], 1, 1977, p 14; before that, for example, ENERGIEANWENDUNG, 23, 1974, 4, p 124.
17. "How Should the PLR Steps Be Integrated into Energy Law?" ENERGIEANWENDUNG, 29, 1980, 3, p 116.
18. Reference is made here to the article entitled "The Energy-Industry Decision on Energy Source Use," ENERGIEANWENDUNG, 26, 1977, 8, pp 253 ff., and 27, 1978, 2, pp 78 ff., which essentially be used unchanged for interpretation.
19. 3rd DB, 10 September 1976, GBL, I, No 38, p 456 in the version of AO, No 3, 10 November 1980, GBL, I, No 33, p 335, furthermore to be applied on the basis of Article 1, AO, No 3, as the 3rd DB/EnVO.
20. 2nd DB, 10 September 1976, GBL, I, No 38, p 452, in the version of the Amending Order of 16 April 1979, GBL, I, No 13, p 97, to be further applied as 2nd DB/EnVO on the basis of Article 36, 1st DB/EnVO.
21. The foundation for this is contained in the decision of the Council of Ministers of 12 May 1980, Item 5, of the listing in Appendix 2.
22. 4th DB, 10 November 1980, GBL, I, 1981, No 2, p 29.
23. "The Energy-Industry Decision on Energy Source Use," ENERGIEANWENDUNG, 27, 1978, 2, p 79.
24. Reference has been made earlier to individual viewpoints in the chapters on "Competence Regulations" and "Energy Inspection."
25. 5th DB, 10 November 1980, GBL, I, No 33, p 336.

#### Text of Decree

East Berlin GESETZBLATT DER DEUTSCHEN DEMOKRATISCHEN REPUBLIK in German Part I No 33, 10 Dec 80 pp 321-330

[Official text of "Decree of 30 October 1980 on Energy Management in the German Democratic Republic--Energy Decree," signed by Willi Stoph, chairman, GDR Council of Ministers, East Berlin]

[Text] Section 1

Area of Application

Article 1

(1) This decree applies to the tasks, rights, and duties of government agencies, economy-managing agencies, combines, enterprises, installations, cooperatives, including their cooperative installations and social organizations in connection with energy source supply, the preparation and implementation of the procurement or

generation, special transportation, storage, and use of energy sources. Unless otherwise specified in this Decree, the regulations issued for the enterprises apply to the combines and procurer cooperatives, including their cooperative installations.

(2) The provisions of Article 2, Paragraph 4, Article 3, Paragraphs 5 and 6, Article 6, Paragraph 1, Articles 7 and 8, Article 12, Paragraph 5, Article 17, Paragraphs 1-6, Articles 18, 20, 29-32, Article 38, Paragraphs 2 and 3, Articles 34, 35, Article 36, Paragraphs 2-5, and Article 37, Paragraphs 1 and 3 also apply to citizens.

(3) Article 9, Paragraphs 3-5, Article 10, Paragraph 4, Articles 17-19, 21, 25-28, and 36 are not to be applied to the Ministry of National Defense, the Ministry of Interior, and the Ministry of State Security, as well as the Customs Administration of the GDR and the State Administration of State Reserves with the subordinate duty stations, units, headquarters, enterprises, and installations. The required regulations are to be issued by the competent ministers or directors of central government agencies in coordination with the minister of coal and energy on his own responsibility.

## Section 2. Management, Planning and Plan Implementation

### Article 2

(1) The uniform development of the energy industry is to be guaranteed in keeping with the requirements of the socialist state as well as the growth of energy requirements on the basis of state plans and balance sheets.

(2) The requirements of the population must be met and the planned growth as well as intensification of all branches of the national economy must be assured through the growing supply of fuels and energy as a result of the maximum utilization of domestic raw material and fuel resources. For this purpose it is necessary according to plan to increase the capacity, productivity, and national-economic effectiveness of the energy industry.

(3) Cooperation in the field of the energy industry with the socialist countries, especially the Soviet Union, is to be developed in depth in keeping with the requirements of socialist economic integration.

(4) Energy sources are to be used efficiently and sparingly.

### Article 3

(1) The Central Energy Commission attached to the Council of Ministers in particular has the following duties:

Decisively to support the drafting of long-term development of the GDR's energy base;

To supervise the accomplishment of all national economic tasks connected with the expansion of the energy base and the necessary material-technical base;

To coordinate measures in the national economy and in all social sectors aimed at the efficient conversion and utilization of energy and to supervise their implementation;

To perform inspections in order to control the accomplishment of energy-industry tasks.

(2) The Ministry of Coal and Energy is responsible for meeting the requirements for energy sources in keeping with the government plans and balance sheets with a high degree of supply reliability, productivity, and national economic effectiveness.

(3) On the basis of decisions by the Council of Ministers and the results of long-term planning, in agreement with the State Planning Commission, the Ministry of Coal and Energy must, with relation to liquid fuels, also in cooperation with the Ministry of the Chemical Industry, work out the long-term concept for energy utilization which becomes the foundation for decisions as to energy source utilization in connection with the erection or reconstruction of conversion and utilization plants.

(4) The Ministry of Coal and Energy must draw up the "energy" complex balance sheets. The energy requirement and the way it is to be met must be illustrated in these balance sheets according to national economic criteria, considering the planned reduction of energy intensity and the utilization of the possibilities of exchanging energy sources. They must at the same time show the utility and primary energy structure of the GDR.

(5) The minister of coal and energy will, in unusual supply situations, decide on the operational measures to be applied regarding energy source supply or he will bring about such decisions. The obligations and rights of the operational management agencies in interconnected grid systems, in terms of taking immediate measures, and those of the minister of the chemical industry regarding liquid fuels are not touched by this. For locally limited extraordinary supply situations, the minister of coal and energy may specify, through legal regulations, that the decision as to the operational measures to be taken be made by the managers of the energy-industry agencies or the bezirk councils.

(6) The minister of coal and energy may, in coordination with the pertinent ministers and the directors of other central government agencies, ban the use of selected energy sources in certain conversion and utilization plants or selected utilization plants for specific purposes through an order (utilization ban) if this is necessary to implement the utility energy structure according to the "energy" complex balance sheets or according to the yields of the individual energy sources.

#### Article 4

(1) The enterprises must according to plan prepare and carry out energy conversion and utilization with the goal of achieving the maximum possible national economic effectiveness. They are obligated to rationalize the energy plants according to plan and to use secondary energy resources to the extent that this is possible in the light of expenditures that can be justified within the national economy.



(2) Enterprises in whose energy plant energy byproducts result from the ordinary energy generation process are obligated to utilize that byproduct energy. In this process, solutions justifiable in terms of the national economy must be worked out. In this connection they must erect suitable plants, they must operate and maintain them, or they must pass the byproduct energy on to other energy customers who can use it with expenditures that can be justified in the light of the national economy.

(3) Agencies superordinate to the enterprises must make sure that the energy requirement, justified in terms of the national economy, will be used as basis for energy planning and energy balance sheet preparation.

(4) The economy-managing agencies and government agencies which are superordinate to the enterprises or the government agencies competent for them must, in their sphere of responsibility, in particular:

1. Plan the energy requirement in long-range terms, as well as consider the energy-industry tasks and requirements in long-term planning;
2. To secure the procurement for generation and the special transport of energy sources in keeping with state plans;
3. To draft and account for the energy plans, to break down the standards for planning energy consumption, the balance sheet components and the quotas for energy sources, as well as the limits for temperature and supply steps;
4. To guarantee a high degree of national economic effectiveness for the enterprise energy facilities in the sector through efficient energy conversion and utilization as well as economical handling of energy sources by means of planning and plan implementation;
5. To guide the initiative of the workers in socialist competition toward energy-industry tasks to the degree required;
6. To guarantee supplies of solid and liquid fuels, justified in terms of the national economy, in the particular sector, especially also on the basis of stock-piling standards;
7. To promote the development of enterprises which work in an exemplary fashion in the energy industry;
8. To guarantee the production of systems and the construction of building for energy conversion and transmission, using the discoveries of scientific-technological progress and to make sure that the byproduct energy, arising during the operation of plants, will be used with an expenditure that can be justified in terms of the national economy;
9. To implement the securing of plants and structures for conversion, transmission, and utilization of energy sources in keeping with their significance.

(5) The economy-managing agencies of the energy consumers must, in their sphere of responsibility, beyond the tasks mentioned in Paragraph 4, in particular:

1. Cause the preparation of operating and process studies according to critical main points, guide their implementation and support their development;
  2. To promote the above-enterprise exchange of experiences in the field of the energy industry, especially with enterprises that are working in an exemplary fashion in the energy industries;
  3. To issue orders for the drafting and accounting of energy consumption norms for specific branches to adapt to the changing conditions.
- (6) To support the ministers in the accomplishment of energy-industry tasks, the industry ministries, the Ministry of the Construction Industry, the Ministry of Agriculture, Forestry, and the Food Industry, as well as the Ministry of Transportation, must set up technical agencies for energy, while the Ministry of Geology and the Ministry of the Post Office and Telecommunications must assign full-time energy officers.
- (7) In the economy-managing agencies and in the enterprises, technical agencies for energy or, if the scope of energy-industry tasks so permits, energy officers must be assigned to support the managers in the accomplishment of energy-industry tasks. Energy officers are also to be assigned to the specified technical agencies of the local councils.
- (8) Technical agencies for energy must be staffed with energy experts who have the required skills and who must be assigned in the required numbers.

#### Article 5

- (1) For energy-intensive plants, if necessary, along with the preparation of the five-year or annual plans, the competent ministries must specify output ceilings or production bans. The foundation for this consists of the decisions of the Council of Ministers and the long-term concept of energy source utilization. The determinations are to be coordinated with the ministries that are responsible for drawing up balance sheets, and in case of state plan items with the State Planning Commission.
- (2) The scope of series production of energy-intensive utilization plants or systems --unless a specific measure has been indicated in Paragraph 1--is to be coordinated by the competent agency ordered to prepare balance sheets or the balancing agency in drafting the five-year plans or by way of preparation of the annual plans with the Central Agency for Efficient Energy Use.
- (3) The list of energy-intensive plants and systems is issued by the minister of coal and energy.

#### Article 6

- (1) Energy suppliers and agencies directly above them are responsible for making sure that the supply tasks, the delivery obligations, and other energy-industry assignments are carried out as specified in the legal regulations. In case of any recognizable deviations in the supply process from the target requirements, the measures corresponding to the particular management echelon must be taken.

(2) Where energy suppliers convert or use energy sources, they and the agencies directly above them are subject to the regulations applicable to energy consumers or their superordinate agencies.

#### Article 7

(1) Electric energy, gas, and thermal energy are to be supplied to the extent that this is permitted by the supply network, and in case of thermal energy, also the generating plants, in the particular territory. In case of supply with solid and liquid fuels, the stockpiling establishments, the optimum transport runs, and the production or import conditions, which are required within the context of the national economy, must be taken into consideration. In case of supply with natural gas, it is furthermore necessary to consider, in addition to network conditions, also the extraction or import conditions.

(2) The obligation to provide supplies in the form of a specific energy source exists if:

1. On the basis of Paragraph 1, permission was given (prior approval was given) for such utilization in accordance with Article 17 or confirmation as to future connection and delivery possibility, or delivery possibility was given;
2. No decision has been issued to exchange the energy source used so far.

The obligation to supply with electric energy, gas, and thermal energy, exists in connection with the fulfillment of the prerequisites in Paragraph 1 furthermore with regard to the standard needs of energy customers unless the expenditure for the erection or expansion of the connecting plant is not justified in terms of the national economy.

#### Article 8

(1) In the context of its plans, the energy combine is responsible for the connection of customer plants to public supply networks and for the expansion of connection plants.

(2) A customer plant must be connected and a connection plant must be enlarged if there is an obligation to supply the particular energy source to the customer.

(3) A customer plant can be connected and a connecting plant can be enlarged, although there is no obligation to supply the particular energy source, if this is possible without boosting the public supply network. The public supply network is to be boosted for connections of this kind only if this is justified in terms of the national economy. Information as to connection and expansion possibilities must be given on request; if a connection or expansion request is submitted thereafter, the energy combine must make the proper decision.

(4) The customer plant must meet the conditions spelled out in the technical connection specifications and other legal regulations or determined on their basis. Until these conditions have been met, the energy combine may refuse to put in the connection and it may temporarily close down customer plants where violations were found during inspections.

(5) A customer who has already been connected to public supply networks must, in response to a justified requirement issued by the energy combine, connect a third party to his plant if:

1. The national economic connection expenditure can thus be considerably reduced;
2. The already connected customer and the third party can be reliably supplied;
3. The already connected customer does not have to put up with any disadvantages when it comes to energy consumption accounting;
4. The third-party connection is reasonably acceptable in view of the proper utilization of the particular piece of land.

This obligation also is in effect with respect to the owner or legal agent of the particular piece of land who is not at the same time the owner of the customer plant; the energy combine if necessary must also give him a justified requirement. This paragraph does not apply to the relationship between the lessor and the lessee or between the party that provides the utility and the user.

(6) Paragraphs 1-5 are to be applied accordingly to miscellaneous energy suppliers.

#### Article 9

(1) The energy combine must illustrate the development of the energy requirement in territorial critical main points and the energy transmissions systems required to meet those needs if necessary also through energy generation plants in long-term supply concepts. They must agree with the long-term concept for energy source use.

(2) The energy combine must draw up complex-territorial energy requirements plans. They must illustrate the energy need in the bezirk for the five-year plan and the annual planning term, considering the possibilities of meeting the needs broken down by energy sources. The plans must agree with the "energy" complex balance sheets.

(3) On the basis of the "output" quotas, the energy combine awards obligatory targets for the maximum permissible utilization of electric energy, gas, or thermal energy during specified intervals of time (output shares). The output shares may be less than the "output" quotas only if the output cannot be transmitted via the existing connecting plant or the prepositioned supply network or if the "output" quotas are demonstrably excessive.

(4) The energy customer is obligated to keep written documentation on the maintenance of the output shares and the limits for temperature and supply steps as well as the "consumption" quotas for solid and liquid fuels.

(5) Economic penalties must be applied whenever the output shares, the "consumption" quotas of energy sources, or permissible space air temperatures have been exceeded.



## Article 10

(1) The bezirk councils must coordinate and integrate, in territorial terms, the energy-industry measures (especially investments), concepts, and plans--which are to be coordinated with them--with the development of the territory as such.

(2) On the basis of the results of long-term planning for production force site distribution and territorial coordination with the five-year and annual plans, the bezirk councils must support the drafting of the complex-territorial energy requirements plans. Through territorial coordination of energy industry measures, including proposals for rational solutions to meet the thermal energy requirement, they must establish agreement between branch and territorial development.

(3) The bezirk and kreis councils will establish energy commissions for the coordination of the territorial energy-industry tasks and to guarantee cooperation among the government agencies, economy-managing agencies, and energy suppliers involved in the accomplishment of those tasks.

(4) The bezirk councils have the right to require enterprises in their territory to stockpile fuels beyond their own in-house requirements, provided the corresponding prerequisites exist or can be created. The requirements cannot be assigned to producers of solid fuels.

## Article 11

(1) The minister of coal and energy will determine the operational management agencies required for operational control, regulation, and constant surveillance of cooperating plants involved in the generation and transmission of electric energy, gas, or thermal energy. Operational management is handled on the basis of balance sheets according to scientific-technological viewpoints and technical-economic necessities, considering quality requirements. Obligations arising from the international interconnected network operation must be met in the case of electric energy and imported natural gas.

(2) The competent operational management agencies in particular are entitled and obligated:

1. To alter the planned operating procedure for the generating and transmission plants in keeping with requirements;

2. To decide on planned and operational shutdown and commissioning of main equipment units in the supply system;

3. To specify the installation of protective and regulator instruments at energy systems to be selected by them and to alter them in keeping with requirements;

4. To demand that operators, by a specific deadline, explain the causes of breakdowns in energy generation and energy transmission systems.

(3) The operational management agencies for electric energy furthermore are authorized and obligated, with relation to thermal power plants, to order reduction in

the lead-in [start-up] temperatures considering the obligation to supply the population, and to decide on experiments in energy plants which can influence the reliable supply to the interconnected system.

(4) It is impermissible without approval from the operational management agency to alter the operational state of main equipment units in the supply system or to attach protective and regulatory devices on energy plants carried on the list of an operational management agency or to change their specified adjustment, unless this measure is absolutely necessary in order to avert a serious threat to people or to assets which are important to the national economy. It is furthermore impermissible to conduct experiments on electric energy plants which can influence the reliable supply to the interconnected system, without the approval of the operational management agency for electric energy.

(5) Special regulations apply to the trial operation of energy conversion and energy transmission plants.

## Article 12

(1) Temperature steps and supply steps (in the form of actual temperature supply steps offered or temperature supply steps withdrawn) are called up [reserved] by the competent operational management agency after decisions have been obtained or made in accordance with Article 3, 5.

(2) In case of a major negative deviation of the outside air temperatures from the long-term mean values, the use of electric energy, gas, or thermal energy, after the call-up [reservation] of temperature steps, is to be reduced according to plan in keeping with the predetermined ceilings. For the period of effectiveness of temperature steps, the output shares are blocked as a function of the ceilings and the delivery demands of the energy customers as well as the delivery obligation of the energy suppliers are reduced under the terms of the contract.

(3) If requirements temporarily cannot be met through the use of available generating capacity and other sources, the consumption of electric energy, gas, or thermal energy must be restricted according to supply cancellation steps which will guarantee the stability of the supply systems along with the least reduction of national economic output capacity under the existing conditions.

(4) Government agencies responsible for the supply sectors will determine how the energy consumers in their sector are to be included in the temperature and supply steps. The Ministry of Coal and Energy must issue the necessary integration principles.

(5) Operational management agencies are authorized and obligated to order emergency [power] cutoffs in case of corresponding conditions.

(6) In case of the call-up of temperature steps and temperature supply cancellation steps as well as instructions as to energy power cutoffs, the energy suppliers do not have the obligation to provide information according to the legal regulations on the contract system of the socialist economy (presently, Article 81 of 25 February 1965 Contract Law applies; CBL [Legal Gazette], I, No 7, p 107).

## Article 13

(1) Supply with solid and liquid fuels is to be managed operationally with the specified measures if this was decided to resolve extraordinary supply situations according to Article 3, Paragraph 5. Energy suppliers must immediately inform their customers as to the decision and its cancellation; the communication can be confined to the time of the start or the termination of the operational management of supply functions.

(2) The following are operational management agencies:

1. The agency for solid fuels, which is directed to prepare balance sheets, with respect to big and special consumers of solid fuels and supply of solid fuels in dealing with bezirks for customers in accordance with Article 3;

2. The agency for liquid fuels, directed to prepare balance sheets, with relation to the customers of liquid fuels to be directly supplied by the producers;

3. The bezirk councils with relation to all other consumers of solid and liquid fuels;

4. The Minol Combine VEB for supplying customers in dealing through the bezirks, according to item 3.

(3) Beyond the provisions of 2, Item 3, the bezirk councils, in determining operational management functions, have the right to require enterprises in their territory temporarily to make solid fuels available to meet an urgent requirement among the population. They must immediately see to the replenishment of the stockpiles of the corresponding type and grade of fuel that have been supplied by the operators on which the requirement had been placed.

(4) The requirements as per Paragraph 3 must first be coordinated with the balancing agency for solid fuels and must be discussed with the enterprise's superordinate agency unless urgency allows no delay. The requirements cannot be levelled against solid fuel makers.

(5) The bezirk councils are authorized to switch certain tasks connected with operational management to the kreis councils.

(6) The operational management agency is authorized to specify the exchange of the hitherto used energy source in keeping with the plant operating procedure that is possible at the energy customer's end, if this is provided for or permitted as an operational measure to resolve an extraordinary supply situation. The energy customer is obligated to accomplish the exchange at the given time. Article 17 is not to be applied to an operational measure.

## Article 14

(1) Energy conversion and energy transmission systems must be operated, considering the health, work-safety, damage, and fire protection regulations, through strict technological discipline while at the same time assuring availability according to plan and high reliability. They must in particular make careful preparation for winter operations; each expired winter season must be analyzed and studied. The facilities must be secured against unauthorized action in keeping with their significance.

(2) The operators of energy generation and energy transmission systems are obligated to maintain the systems according to plan and, in case of damage, also above and beyond the plan. Machine-building, electrotechnology and electronics, and construction industry plants are obligated to assume extra-plan maintenance functions in case of damage with serious effects to the national economy within the framework of state plan targets.

(3) Operating and maintenance personnel must be given skill training systematically and regularly. Damage control (and prevention) training is an essential part of this type of advanced instruction.

(4) Breakdowns and other special events in energy generation and energy transmission facilities are subject to mandatory reporting.

(5) Paragraphs 1-4 are to be applied accordingly to the operation of plants for the procurement of coal, natural gas, and petroleum, as well as for the separation, transportation, and dumping of waste. Special legal regulations apply to the trial operation of plants and systems.

## Section 3. Energy-Industry Standards and Targets

### Article 15

(1) The Ministry of Coal and Energy is responsible for drafting energy consumption standards for energy-intensive installations (hereafter called energy consumption standards), while the Ministry of the Construction Industry is responsible for drafting heat consumption standards for space heating in buildings (hereafter called heat consumption standards).

(2) On the basis of the energy consumption standards, the heat consumption standards, and the standards for planning material and energy consumption, the specific energy consumption standards are then to be worked out.

(3) The producers of plants or buildings are obligated to document the maintenance of the permissible energy consumption, in keeping with standards or norms for these products, as a quality characteristic.

(4) Energy consumption and heat consumption standards are to be amended if improved energy solutions result from scientific-technological progress or if there are other important reasons. Other standards are to be amended to the extent that they obstruct the implementation of the particular standards.



(5) Special permits for energy consumption and heat consumption standards require approval by the minister of coal and energy or the minister of the construction industry.

(6) Energy conversion and energy utilization plants, which are to be imported, must meet the national economic criteria of energy source utilization in the GDR, especially the energy consumption standards of efficient energy utilization. Compliance with these requirements must be examined through the granting of the import application or confirmation of the order for planned imports of energy conversion systems and selected energy use systems.

#### Article 16

(1) The method of drafting, defending, and confirming energy consumption standards as well as their review, the tasks of the managers, as well as the material recognition to be given for energy savings achieved are determined according to the legal regulations for the material industry, unless otherwise indicated in special legal regulations.

(2) The very highest demands must be established for the quality of technically-economically justified energy consumption norms. The participating workers are to be granted appropriate material recognition for their constant implementation. Regulations on increased material recognition for saving raw materials and materials important to the national economy are not affected by this.

(3) Documentation as to compliance with energy consumption standards must constantly be maintained by the enterprises. The information obtained from these records must be included in management activities.

(4) Energy conversion and energy utilization plants must be so equipped with measurement, control, and regulating devices that their effective operation and the determination of the specific energy consumption will be guaranteed. This applies accordingly to centrally-heated residential buildings as well as heated industrial buildings and social buildings.

(5) Economic penalties must be applied whenever selected energy consumption standards are exceeded.

#### Section 4. Energy Source Utilization

#### Article 17

(1) Energy source utilization in conversion and utilization plants, which are to be erected, rebuilt, enlarged, or otherwise essentially altered, requires approval unless exceptions are allowed in the legal regulations. The decision as to approval is made by:

1. The energy combine with relation to projects of the citizens;
2. The Ministry of Coal and Energy with relation to projects of other energy consumers; it may delegate the decision as to projects of lesser energy-industry significance to subordinate agencies.

(2) If not possible beforehand, the decision is to be made in conjunction with five-year planning or in preparation of annual planning. A decision is to be made on applications from citizens within 6 weeks; if this is not possible, the anticipated date of the decision is to be communicated in writing within that deadline. The decision must be justified if it deviates from the application or if it is connected with specific requirements.

(3) Approval of energy source utilization is a prerequisite for the following:

1. The start of project planning,
2. Material and financial balancing of energy sources and equipment for the pertinent conversion and utilization plants,
3. Inclusion of project in the plan,
4. Procurement of import offers or initiation of business relationships for the import of conversion and utilization plants.

Anyone who places plants in operation without having first gotten the required approval for energy source utilization is not entitled to having those plants supplied with energy sources.

(4) The energy customer is obligated immediately and in writing to report the completion of work on the plant to the energy-industry agency to which the energy need is to be reported. The permit, once given, loses its validity 1 year after the commissioning deadline mentioned therein if the plant has not yet been placed in operation by then.

(5) The competent energy-industry agency is authorized, on the basis of altered prerequisites for the assembly or utilization of energy sources or for other important national economic reasons, to make a new decision or to issue additional requirements in accordance with the provisions of Article 18.

(6) The energy consumer is obligated immediately in writing to report to the energy-industry agency, to which the energy need must be reported, any essential changes in the prerequisites under which the decision as to energy source utilization was handed down. The report basically need no longer be submitted if the change materializes more than 5 years after the completion of the particular project.

(7) Investment clients must draft separate energy components for task assignments and documentation connected with basic decisions on investment projects whose energy requirement is more than 105 TJ/yr (more than 25 Tcal/yr) and they must have the competent energy-industry agencies prepare an expert report. The requirements, in terms of content, regarding the separate energy sections and the submission deadlines are to be indicated in the decision as to energy source utilization, related to specific undertakings.

#### Article 18

(1) Along with the decision on energy source utilization, it is possible to issue specific requirements which, for the sake of the national economy, will guarantee the accomplishment of energy-industry tasks.

(2) With the help of specific requirements, it may be determined especially that:

1. The plant is to be designed for heat-power combination, for multi-material operation, or as adjustable consumer;
2. Additional measures are to be carried out for rationalization;
3. Solid and liquid fuel (without engine fuels) must be stockpiled by certain specific target dates in minimum quantities and the necessary storage capacities must be created;
4. A convertible heating plant may be operated only for a certain period of time;
5. Changes in certain decision-making prerequisites over a longer period of time than indicated in Article 17, Paragraph 6, must be reported.

(3) Energy customers are obligated in writing to report the accomplishment of the requirements to the energy-industry agency to which the energy need is to be reported.

(4) Expenditures arising from compliance with specific requirements must be borne by the party against which the requirements were leveled.

#### Section 5. Erection, Alteration, and Shutdown of Energy Plants

##### Article 19

(1) The erection and major alteration of energy generation plants require energy-industry approval unless exceptions are permitted in the legal regulations. The decision as to approval will be made:

1. By the agency, directed to maintain balance sheets, for the energy source with relation to undertakings involved in electric energy or gas generation;
2. The energy combine with relation to thermal energy generation projects.

It is impermissible to start actual work before the required energy-industry permit has been issued.

(2) Along with the permit, it is possible to issue specific requirements which, for the sake of the national economy, will guarantee the accomplishment of energy-industry tasks.

(3) Thermal energy generation plants which become necessary to be erected, enlarged, operated, and maintained:

1. By the energy combine if the maximum thermal load in the final plant version reaches the magnitude specified in the legal regulations and if there are no essential reasons opposing the public operation of the plants.

2. By the thermal energy allocation recipients or by an association in all other cases.

(4) Enterprises whose thermal energy need is to be met with the help of new plants of the energy combine according to Article 3, Paragraph 1, must materially and financially participate in the maximum heat load of the thermoenergy generation plants, within the ratio of their maximum output share, considering the factor of simultaneousness. That does not apply to enterprises that service complex housing construction buildings.

(5) Paragraphs 1-4 are to be applied accordingly to transmission systems, Paragraph 4 is furthermore to be applied accordingly to undertakings of miscellaneous thermoenergy suppliers if investment participation was agreed upon or determined.

#### Article 20

Customer plants which are to be or which are connected with public supply networks may basically be erected, essentially altered, or maintained only by the establishment that holds an energy-industry license for this purpose issued by the energy combine. Exceptions may be permitted under the provisions of legal regulations.

#### Article 21

(1) Energy generation and energy transmission plants are to be placed in operation according to a program (commissioning program). Customer plants may not be placed in operation without a special program unless otherwise specified in legal regulations.

(2) A release declaration from the investment client to start trial operations in an energy generation plant.

(3) The release of an energy generation plant for trial operation and the start of sustained operations must be preceded by technical acceptance [inspections].

(4) Electric energy generation plants with standard block capacities of more than or equal to 200 Mw must, for purposes of sustained operations, further and as a matter of principle be subjected to government acceptance procedures. If this procedure can be carried out only after contractual acceptance, then contractual acceptance applies with the reservation as to the decisions to be made in conjunction with government acceptance.

#### Article 22

(1) Whenever energy transmission systems come into contact with telecommunications systems, traffic systems, water bodies, water-industry installations, or other supply facilities, safe operation or safe use and the possibility of proper maintenance must be guaranteed for all installations.

(2) When telecommunications systems are influenced by energy transmission systems, special regulations of the post office and telecommunications systems apply. When energy transmission systems come into contact with public roads and highways, the special regulations, issued on the basis of regulations on the highway system, shall apply in addition to the provisions of Paragraph 1.



## Article 23

(1) Series-produced systems for the conversion, transmission, and the use of energy sources must basically meet the requirements of rational energy conversion and utilization according to the criterion which is to be established for the determination of series production. If systems require examination, series production may be started only after a government quality symbol or a special permit has been issued.

(2) The Standardization, Measurement, and Commodity Testing Office must inspect the quality of equipment and assembly work for the most important undertakings in energy generation and transmission. The list of undertakings to be checked must each year be agreed upon between the minister of coal and industry and the president of the Standardization, Measurement, and Commodity Testing Office.

## Article 24

(1) Suspension of the operation of an energy generation plant, which leads to the loss of the installed and maximum possible output (shutdown), the dismantling and scrapping of an energy generation plant (wrecking), as well as the transfer of an energy generation plant to another operator require energy-industry approval since they are shutdown measures, unless exceptions are allowed in the legal regulations. Article 19 applies accordingly to the decision on the application, the permissibility of implementation measures, and the issue of special requirements, while Article 17, Paragraph 2 applies accordingly in connection with the time and the justification of the ruling.

(2) When energy generation plants are placed out of operation according to plan and in an operational manner, this does not constitute a shutdown within the meaning of Paragraph 1, Sentence 1.

(3) Paragraphs 1 and 2 are to be applied accordingly to energy transmission plants (without customer plants) but the energy combine must decide on any possible shutdown.

## Section 6. Energy Inspection

### Article 25

(1) The accomplishment of energy-industry tasks of government agencies, economy-managing agencies, combines, enterprises, installations, and cooperatives, including their cooperative installations, primarily in the field of rational energy conversion and utilization, is supervised by the energy inspectorate of the Central Energy Commission attached to the Council of Ministers.

(2) The energy inspectorate is the agency of the Central Energy Commission attached to the Council of Ministers. It accomplishes its tasks by carrying out the resolutions of the SED, the laws, and the other legal regulations as well as instructions from the director of the Central Energy Commission attached to the Council of Ministers.

(3) The energy inspectorate is a corporation and a budgeting organization; it is broken down into the main inspectorate and the bezirk inspectorates. Central government agencies may be supervised only by the main inspectorate.

(4) Inspection [control] of manufacturers of plants and buildings may, with a view to the energy consumption and thermal consumption standards to be maintained, also include those products.

(5) Inspections are carried out by the energy inspectors from the energy inspectorate. The chief of the main inspectorate and the chiefs of the bezirk inspectorates may assign suitable experts from the national economy as part-time energy inspectors after getting approval from the particular appropriate manager.

(6) Energy inspectors are authorized to enter plants, buildings, rooms, and work areas (objects) for inspection purposes. If entering such facilities is regulated by special safety, health, or similar regulations, the energy inspectors may enter them only after the specific requirements have been met.

(7) Energy inspectors are furthermore authorized to demand information from the manager, from management personnel, and from other personnel at the establishment to be inspected and to record the situation themselves. Regarding state and official secrets, the pertinent regulations must be complied with.

#### Article 26

(1) If it is determined that the establishment inspected has seriously violated its energy-industry obligations, the energy inspectorate may issue written requirements to the effect that changes are to be made by a certain deadline.

(2) The inspected establishment is obligated in writing to report compliance with specific requirements to the energy inspectorate.

#### Article 27

(1) To make sure that specific requirements are met, the energy inspectorate may, in the ruling on requirements, threaten fines of up to M100,000.

(2) The amount of fine should be determined in the light of the significance of specific requirements fulfillment, the seriousness of the obligation violation, and the effects on the assets of the inspected establishment.

(3) The threatened fine becomes due if the energy inspectorate has ascertained non-compliance or has observed incomplete compliance with requirements.

(4) The fine is to be paid within 5 working days. It is to be cancelled if the requirements could not be met for important reasons; the inspected establishment must present such reasons in a manner that can be checked out.

(5) Fines can be threatened and determined repeatedly whenever requirements for the same obligation violation have not been complied with.

## Article 28

(1) The operational management agency for electric energy and gas, unless Paragraph 2 is to be applied, as well as the operational management agency for solid fuels, according to Article 13, Paragraph 2, Item 1, are authorized in combines, enterprises, installations, and cooperatives, including their cooperative installations, with relation to the particular energy sources, to inspect the accomplishment of energy-industry tasks connected with extraction or generation, special transport, and stockpiling, as well as the maintenance of quotas, output shares, and obligatory ceilings for temperature and supply steps.

(2) The energy combines are authorized, in combines, enterprises, installations, and cooperatives, including cooperative installations, with relation to all energy sources, to inspect the accomplishment of energy-industry tasks connected with the generation, the special transport, and stockpiling, energy planning, complex-territorial thermal energy supply, as well as compliance with quotas, output shares, and mandatory ceilings for temperature and supply steps, the reporting of the energy need, and compliance with requirements according to Article 18, 19, Paragraph 2, and Article 34, Paragraph 3.

(3) Article 25, Paragraphs 5-7, and Articles 26 and 27 are to be applied accordingly.

## Section 7. Use of Land

## Article 29

(1) The energy combine is authorized permanently or temporarily to share in the use of pieces of real estate for plants to be used for line transport, transforming, regulation, switching, storage, and compensation of electric energy, gas, and thermal energy (energy transmission systems). The right to permanent shared use for plants which are not used for line transport exists only if an area of less than or equal to 60 m<sup>2</sup> is required for each individual plant.

(2) Joint use must basically be agreed upon, specifically, in case of permanent joint use with the owner or legal agent of the piece of land or, if there is a cooperative land utilization right to the particular piece of land, with the cooperative, in case of temporary joint use, with the parties authorized to use the land. The partners to the agreement whose rights are essentially impaired to joint use may ask the energy combine for appropriate indemnity.

(3) In the case of permanent joint use, the party authorized to use the land may without notice cancel the contract relationship with the owner or the legal agent or entity of the particular piece of land or, if the proper utilization of the piece of land can be continued at least partly, it may demand that the contract relationship be amended accordingly.

(4) The right to joint use is transferred to the particular legal successor of the energy combine. It obligates the particular owner or legal entity holding the piece of land and, in case of permanent joint use likewise, the particular party authorized to use the land; there is no second indemnity award.

### Article 30

- (1) If no agreement is arrived at regarding the joint utilization right, the joint utilization right may, upon request of the energy combine, be justified by a ruling handed down by the appropriate kreis council.
- (2) Prior to ruling, the kreis council must hear the parties concerned and must obtain opinions from the competent city or community council.
- (3) The kreis council if necessary must at the same time decide on the type and amount of indemnity. It will depend on general legal regulations regarding indemnity.
- (4) Paragraphs 1-3 are to be applied accordingly if the owner or legal agent of the piece of land and the party entitled to use it cannot agree on amending the contract relations. The request must be submitted by the party entitled to use the land.

### Article 31

- (1) The party entitled to use the piece of land is obligated--after justification of the joint utilization right--to exercise his right in such a manner that the safe operation and maintenance of the energy transmission system will be possible at all times, along with the erection, alteration, and elimination of energy transmission systems during the period of time agreed upon and that the applicable safety regulations are complied with.
- (2) The establishment authorized to use the land in particular is obligated:
  1. To maintain the specified intervals between growing vegetation, building structures, and other objects, on the one hand, and the energy transmission systems, on the other hand;
  2. To refrain from planting anything at a certain distance from the axis of the energy transmission systems and to remove any growing vegetation to the extent that it may interfere with or endanger the systems;
  3. To allow the energy combine to take the required safety precautions.

Work which could endanger the implementing party or the energy transmission systems must in advance be coordinated with the energy combine.

- (3) If the party authorized to use the land does not comply with his obligations, he must be admonished in writing, giving a specific deadline, if the deadline has passed without any action, the energy combine may have the required work done at the expense of the establishment authorized to use the land. In case of danger during the delay, the energy combine may have work done or may itself do the work without any admonition.



## Article 32

(1) On request of the party authorized to use the land of the owner or legal agent of the particular piece of land, an existing energy transmission system may be moved. The energy combines will decide on that.

(2) A request for moving a system should be approved if public energy supply would not be impaired and

1. If the piece of land, after the move, could be used considerably more effectively;

2. The disadvantages arising from the transfer as far as the energy combine and certain parties are concerned would be minor;

3. The move could be carried out within current plans of the energy combine.

(3) The applicant must basically take care of all expenditures arising from the move.

(4) Paragraphs 1-3 are to be applied accordingly to temporary moves, that is to say, on account of construction activities, and to miscellaneous alterations of existing energy transmission plans, unless the provisions of Article 8, Paragraphs 1-3 apply.

## Article 33

(1) Precisely outlined surface areas are to be selected and are to be kept free (restricted surfaces) as possible location for an electric energy generation plant with more than or equal to 250 Mw installed capacity, upon request of the Ministry of Coal and Energy, for integration into the social and national economic development of the territory. The State Planning Commission, in coordination with the pertinent bezirk council, will decide on this determination. The ban shall be in effect for 10 years; it can be extended.

(2) Building structures may basically not be erected on restricted surfaces, existing building structures may basically not be altered essentially. This is to be implemented through bans on construction which are ordered by the local government agencies.

(3) If site or other utilization permits must be issued by way of exception for social reasons, restricted surface areas may be built up only on the condition that:

1. The economy-managing agency responsible for the future electric energy generation plant has given its approval;

2. Only those building structures are erected or result from alteration whose removal is possible without any major expenditure;

3. The removal or alteration of building structures, which may become necessary, will be accomplished at the expense of their owners or legal entities.

(4) The appropriate agencies of the water industry must, during the days of preparing the restricted surface area determination, decide on future water utilization for the operation of electric energy generation plants according to the criterion of efficient water utilization. The preliminary water-industry decision is to be handed down for the time the ban is to be in effect.

#### Article 34

(1) Earthwork, high-rise construction, blasting, and other activities are to be so prepared and carried out that energy transport facilities as well as the telecommunications and remote-control lines serving for their operation will not be destroyed, damaged, or otherwise impaired.

(2) Prior to the start of work, the party responsible for implementation must obtain full information from plant operators to be considered regarding the existence and the precise location of underground energy transport systems. The party responsible for implementation must specify the start and the presumed duration of the work.

(3) Building structures in the hazard radius of energy transport systems may be erected or considerably altered only with the approval of the system operators. Approval may be connected with specific requirements which would secure the accomplishment of energy-industry tasks for the sake of the national economy. It is impermissible to start with the execution of construction projects before the permit has been issued.

#### Section 9. Complaint Procedure

#### Article 35

(1) Appeals may be filed against rulings according to Article 8, Article 17, Paragraphs 1 and 5, Article 18, Paragraph 1, Article 19, Paragraphs 1 and 2, Article 24, Paragraph 1, Article 26, Paragraph 1, Article 32, Paragraph 1, and Article 34, Paragraph 3. It can be filed within 6 weeks after delivery to the head of the decision-making agency, unless a shorter deadline is called for in legal regulations, and it must be justified.

(2) If the appeal is not allowed, it must, along with a comment, within a period of 4 weeks, be passed on to the director of the agency competent to decide on appeals and the latter must decide within another 4 weeks. The appellant must be informed of this forwarding procedure.

(3) If it is impossible to meet the appeal processing deadlines, the appellant must be given a justified interim ruling and the anticipated final ruling date must be given in it.

(4) Decisions by the minister of coal and energy are final and are not subject to appeal. They must in advance be discussed with the director of the government agency responsible for the particular energy customer or applicant (central government agency or bezirk council).

(5) Decisions by the energy combine according to Article 8, Article 32, Paragraph 1, and Article 34, Paragraph 3, are made by the competent enterprise division or directorate sector. The manager of the energy combine is competent in deciding on the appeal according to Paragraph 2.

## Section 9. Disciplinary Penalty Provisions

### Article 36

(1) Anyone who, as responsible official, in a government agency, economy-managing agency, combine, enterprise, installation, cooperative, including a cooperative installation, or a social organization intentionally or negligently:

1. Carries out actions subject to permit in accordance with Article 17, Paragraph 1, Article 19, Paragraph 1, Article 24, Paragraph 1, or Article 34, Paragraph 3, without prior approval,
2. In violation of the mandatory step limit procures energy sources or exceeds the output shares in accordance with Article 9, Paragraph 3, or the "consumption" quotas for solid and liquid fuels,
3. Violates the provisions of Article 9, Paragraph 4, or the decisions in Article 13, Paragraph 6,
4. Does not discharge his obligations in accordance with Article 31, provided the work is not done for his account,
5. Violates the provisions of Article 34, Paragraph 1 or Paragraph 2,
6. Violates a utilization ban according to Article 3, Paragraph 6, or a specific requirement according to Article 10, Paragraph 4, or Article 13, Paragraph 3,
7. Does not meet specific requirements according to Article 13, Paragraph 6, Article 18, Paragraph 1, or Article 26, Paragraph 1,
8. Exceeds the mandatory target figures for maximum permissible space air temperatures or the illumination expenditure or uses electrical space heating units in violation of obligatory regulations,

May be given a reprimand or a disciplinary fine of M10-M500.

(2) Likewise penalized may be anyone who, as citizen, intentionally or negligently:

1. Carries out actions subject to permit according to Article 17, Paragraph 1, or Article 34, Paragraph 3, without prior approval,
2. Does not fulfill the obligations according to Article 31, provided the work is not done for his account,
3. Violates the provisions of Article 34, Paragraph 1 or Paragraph 2,

4. Fails to comply with requirements according to Article 18, Paragraph 1,

5. Violates a utilization ban according to Article 3, Paragraph 6.

(3) A disciplinary fine of up to M1,000 may be ordered if, as a result of an intentional disciplinary violation according to Paragraphs 1 or 2:

1. Major damage was caused or could have been caused,

2. The interests of society were crudely disregarded or

3. If an intentional disciplinary violation was committed out of a desire to obtain an advantage or was repeated within 2 years and was punished with a disciplinary penalty.

(4) The enforcement of the disciplinary penalty procedure is the responsibility:

1. Of the manager of the energy combine in the case of the disciplinary violations mentioned in Paragraph 1, Items 1-5 and Paragraph 2, Items 1-4,

2. The chairman of the bezirk or kreis council or his competent deputy for the disciplinary violations mentioned in Paragraph 1, Item 6, and Paragraph 2, Item 5,

3. The director of the main inspectorate or the bezirk inspectorate of the energy inspectorate or directorate of the agency according to Article 28 in case of the disciplinary violations mentioned in Paragraph 1, Item 7,

4. The director of the main inspectorate or the bezirk inspectorate of the energy inspectorate in case of the violations mentioned in Paragraph 1, Item 1, or Article 17, Paragraph 1, as well as the disciplinary violations mentioned in Item 8.

(5) The 12 January 1968 Law on the Fight against Disciplinary Violations--OWG [Misdemeanors Law]--(GBL, I, No 3, p 101) applies to the implementation of the disciplinary penalty procedure and the ruling on disciplinary penalty measures.

(6) In case of minor misdemeanors according to Paragraph 1, Item 8, the energy inspectors are authorized to issue a warning along with a fine of M1 and M20.

#### Section 10. Final Provisions

##### Article 37

(1) Unless otherwise specified in this decree, its regulations apply:

For liquid fuels, also to engine fuels and liquid gases,

For plants, also to systems, equipment, and apparatus.

(2) The Energy Interconnected Grid Network Combine VE has the same tasks and authority as an energy combine according to Article 29, Paragraph 2, with relation to thermal energy but it is not responsible for checking on compliance with requirements according to Article 19, Paragraph 2, and Article 34, Paragraph 3.



(3) Articles 29-32 are to be applied accordingly to state enterprises, which operate non-public energy transmission plants completely or partly for the supply of the population, the economy, or miscellaneous sectors, but not to production cooperation partners of these enterprises and of the energy combines.

#### Article 38

(1) Implementing regulations for this decree will be issued in agreement with the directors of the competent central government agencies by:

The director of the Central Energy Commission attached to the Council of Ministers for rational energy conversion and application as well as energy inspection,

The minister of coal and energy for all other areas.

Regulations on the delivery of energy sources, on the technical conditions for connection to public supply networks, on entitlement to work on energy plants, as well as on load, gas, and thermal energy distributions are issued by the minister of coal and energy in agreement with the directors of the competent central government agencies in the form of orders.

(2) The minister of coal and industry may issue methodological provisions for planning and plan implementation, for rational energy conversion and utilization, for the erection, major alternation, and shutdown of energy plants. They must not conflict with the GDR National Economy Planning Regulations--Planning Regulations.

#### Article 39

(1) This decree takes effect on 1 January 1981.

(2) The following are at the same time rescinded:

The 9 September 1976 Decree on the Energy Industry in the GDR--Energy Decree--GBL, I, No 38, p 441,

The 8 November 1979 Second Decree on the Energy Industry of the GDR--Second Energy Decree--GLB, I, No 40, p 382.

#### Text of Implementing Regulation

East Berlin GESETZBLATT DER DEUTSCHEN DEMOKRATISCHEN REPUBLIK in German Part I No 33, 10 Dec 80 pp 330-335

[Official text of "First Implementing Regulation of 10 November 1980 for the Energy Decree--Management [Planning] Plan Implementation," signed by Wolfgang Mitsinger, minister for coal and energy, East Berlin]

[Text] On the basis of Article 38, Paragraph 1, of the 30 October 1980 Energy Decree (GBL, I, No 33, p 321), the following is hereby ordered in agreement with the directors of the competent government agencies:

## Article 1. Definitions

1. A customer plant consists of the totality of the fixed installations which start at the terminal point of the energy supplier's connecting plant and which are located in the direction of energy flow and which are used for line transport as well as the plants for the use of electric energy, gas, thermal energy, and the plants for the return transport of used heat sources to the terminal point of the connecting plant.
2. A connecting plant is that part of an energy transmission system which serves for connecting the customer plant to the particular main network or the main network of the energy supplier.
3. Contact between energy transmission facilities and telecommunications facilities, transportation facilities, water bodies, water-industry installations, and other supply facilities comprises approach, crossing, and joint use.
4. An operator of an energy plant is anyone who uses the plant on his own responsibility and for his own account, regardless of whether he is its legal entity or owner.
5. Energy generation is the conversion of energy sources into electric energy, gas, or thermal energy.
6. Energy sources within the area of application of the Energy Decree are electric energy, gas, thermal energy, solid fuels (brown coal and hard coal as well as the products made from them without the addition of binders and special cokes) as well as liquid fuels.
7. Energy combines are the state combines whose direct task according to plan consists mainly in supplying energy customers in a region with electric energy, gas, and thermal energy from supply networks as well as accomplishing the further tasks assigned to them in connection with the implementation of government energy policy in the territory.
8. Gas is city gas and natural gas. As far as efficient use is concerned, this also includes other gases for burning which are important in energy terms.
9. Main equipment items in the supply system include the following:
  - (a) For electric energy: nuclear reactors and steam generators, turbines, generators; power lines and switching systems in the interconnected grid;
  - (b) For city gas: generators and coke furnaces, processing plants, gas mixing stations, compressor stations, input and output devices on underground containerless storage tanks; lines of the interconnected grids;
  - (c) For natural gas: acceptance and compressor stations, input and output devices on underground containerless storage tanks; lines of the high-pressure system;

(d) For thermal energy: steam generators, hot-water and warm-water heaters, main circulating pumps, storage tanks; primary networks or primary lines.

10. Maintenance comprises the work required for the establishment of technical operational safety and operational capability of the installations on the prior or on a higher level (repairs), the inspection of installations (technical inspection) and the periodically necessary work to preserve technical operational safety and operational capacity of plants (maintenance).

11. A quota is the mandatory, government-determined maximum limit on permissible procurement ("procurement" quota) or consumption ("consumption" quota) of energy sources for annual, quarterly, or monthly periods of time or the permissible use of electric energy, gas, or thermal energy during certain specified periods of time which, in each case, are less than or equal to 1 day ("output" quota).

12. Public supply installations are energy generation and energy transmission facilities which are operated by energy combines.

13. Extraordinary supply situations in the region of a Bezirk or a part thereof are locally limited. If the switching command sector of a sector load distribution or regional or Bezirk gas distribution [division] does not coincide with the Bezirk boundaries, the switching command sector prevails.

14. Local supply means supply with electric energy and gas from energy transmission installations which make up the local network (low-voltage or low-pressure network) and from installations from which the energy is directly supplied into the local network, including the energy supplier's connecting plants.

15. Thermal energy is the energy which is supplied along with the heat source of steam, hot water, or warm water via energy transmission installations. The concept is to be applied to steam, hot water, and warm water, which are not delivered to third parties, considering the prevailing conditions.

16. A major alteration in the energy generation plant is an alteration which leads to an increase or a reduction in the installed and maximum possible output or where main equipment items are reconstructed or completely exchanged. The same applies to energy transmission installations.

Re: Article 3, Paragraph 5 of the Decree:

## Article 2

(1) The following will decide on operational measures to be taken regarding energy source supply in locally limited extraordinary supply situations in the case of electric energy, gas, and thermal energy:

1. The manager of the competent energy combine or of the operator of the inter-connected system installations in agreement with the manager of the appropriate operational management agency regarding energy transmission installations, unless the provisions of Item 2 apply;

2. In coordination with the competent energy commissions, the manager of the territorial heat energy distribution [division] or of the heat energy supplier with relation to thermal energy supply installations.

(2) The operational management agencies must decide on their own responsibility regarding operational measures for energy source supply in locally limited extraordinary supply situations involving solid and liquid fuels.

(3) Paragraphs 1 and 2 do not affect the duty to report breakdowns and other special events, as well as the duties and rights of the operational management agencies of interconnected systems in accordance with Article 3, Paragraph 5, Sentence 2, of the Decree.

(4) The minister of coal and energy--and, with relation to liquid fuels, the minister of the chemical industry--may at any time make the decision on the operational measures to be taken.

Re: Article 4, Paragraphs 1 and 2, of the Decree:

### Article 3

(1) The following in particular are included among the energy-industry tasks of the enterprises:

1. Regularly and carefully to analyze the development of enterprise energy operations especially through operational and process analyses;
2. To plan and carry out the rationalization or reconstruction measures in keeping with the discoveries of scientific-technological progress;
3. To plan and carry out internal enterprise measures aimed at steady operation of in-house conversion, transmission, and utilization plants;
4. To exploit the energy resources of the enterprise, especially the byproduct energy yield and the secondary resources, to the extent that this is possible with an expenditure that can be justified in terms of the national economy;
5. To work according to plan with energy-industry norms and targets;
6. To use and convert energy efficiently and to employ it economically in overall terms as well as to reduce the energy intensity;
7. To draft and account for the energy plan;
8. To comply with standards regarding the planning of energy consumption, quotas, and output shares for energy sources;
9. Properly to stockpile solid and liquid fuels;
10. To reduce the actual output utilization for electric energy, gas, and thermal energy during the prime load times in the public supply networks;



11. At the right time to request energy carrier utilization decisions in connection with energy needs that are subject to mandatory reporting.

(2) Paragraph 1 is to be applied to installations, non-producing cooperatives, and social organizations.

Re: Article 4, Paragraph 4, of the Decree:

#### Article 4

Energy customers must immediately submit the allocated quotas to the appropriate energy suppliers.

#### Article 5

(1) For energy customers which are not required to prepare energy plans, the tasks of the capital asset operators are performed by:

The appropriate energy combine with relation to electric energy, gas, thermal energy, and solid fuels;

The Minol VEB Combine with relation to heating oil, liquid gases, as well as diesel fuels for production purposes and miscellaneous services.

(2) The quotas are broken down by the agencies mentioned in Paragraph 1, in coordination with the bezirk council.

Re: Article 4, Paragraphs 6-8, of the Decree:

#### Article 6

(1) Specialized agencies for energy must be staffed with (full-time) energy specialists and the corresponding experts. The number of special agency personnel to be assigned must be confirmed by the appropriate superordinate agency.

(2) Energy officers are persons who are proportionately employed in taking care of this task.

(3) Energy specialists must have the theoretical and practical knowledge required for the particular management level and the characteristics of the tasks assigned. Energy officers should have the practical knowledge required and should within a due interval of time also get advanced training in theoretical terms for the performance of their functions.

(4) Managers must make sure that energy specialists or energy officers attend the advanced training programs designed for them.

#### Article 7

(1) The manager must make sure that the special agency for energy matters can organize the accomplishment of energy-industry tasks in direct cooperation with the managers of the planning, economics, engineering, production, materials, etc., sectors.

(2) The special agency for energy matters must supervise the accomplishment of energy-industry tasks through systematic inspections, it must regularly inform the manager and, in case of special events, it must immediately inform him, and it must submit proposals to develop enterprise energy operations.

(3) The special agency for energy matters can at the same time be given the job of managing the operation of energy generation and energy transmission installations.

#### Article 8

(1) Energy officers are to be assigned:

1. In enterprises which must prepare energy plans and whose energy needs are comparatively low and which have no employees or only few employees in energy-industry BMSR [industrial measuring, control, and regulating] technology and conversion and transmission installations;

2. In combines and enterprises that are not obligated to prepare energy plans;

3. In installations, non-producing cooperatives, and social organizations if the anticipated energy need in at least one of the energy source groups exceeds the boundary value given below:

Electric energy 25 kw or 50,000 kwh/yr;

Gas  $20 \text{ m}^3/\text{hr}$  or  $1,000 \text{ m}^3/\text{month}$ , or  $50,000 \text{ m}^3/\text{yr}$  city gas or the corresponding quantity of natural gas converted via thermal energy;

Thermal energy 25 GJ/day (6 Gcal/day) or 8,370 GJ/yr (2,000 Gcal/yr);

Solid fuels 50 t/yr;

Liquid fuels (excluding engine fuels and excluding liquid gases) 20 t/yr.

(2) The manager must determine the work area of the particular employee, including his tasks as energy officer, in the job manning plan. The manager may in exceptional cases take over the job of energy officer himself; this must be spelled out in writing.

(3) If the energy customer has several tapping stations (business offices, institutional buildings, school buildings, etc.) which are supplied via separate connecting systems or as separate service locations, the obligations spelled out in Paragraph 1 pertain to every tapping station.

(4) Installations and social organizations or their tapping stations, which according to plan do not have any janitors, handmen, boilermen, or other general administration employees are exempt from the obligations spelled out in Paragraph 1.

(5) The energy officer must systematically inspect the accomplishment of the energy-industry tasks, he must regularly report to the manager and in case of special events he must immediately inform him and he must submit proposals for measures to be taken.

## Article 9

(1) The special agencies for energy matters are to be given special technical instructions for the drafting and accounting of energy plans, energy need determination, energy-industry standard and target development work, analysis of enterprise energy operations, as well as on other fundamentally energy-industry oriented matters.

(2) Guidance for the special agencies for energy matters and chief energy officers of the central government agencies must be provided by the Central Energy Commission attached to the Council of Ministers in cooperation with the Ministry of Coal and Energy, the other specialized agencies, and the special agency of the particular superordinate agency.

(3) Energy officers must be given special technical guidance concerning energy need determination, energy-industry standard and target development, analysis of energy utilization, as well as other fundamentally energy-industry oriented matters through the special agency for energy matters or the energy officer of the particular next-higher agency. If the superordinate agency has neither a special agency for energy matters, nor an energy officer, the energy officers are included in territorial guidance.

## Article 10

Territorial guidance (Article 9, Paragraph 3) and advanced training for energy officers (Article 6, Paragraph 3) must be organized by the kreis energy commissions in cooperation with the energy combines, using the possibilities created by the chamber of technology.

## Article 11

The German Post Office directorates are equated to economy-managing agencies and their subordinate duty stations of offices are equated to enterprises. Corresponding determinations for the German Railroads are to be made by the minister of transportation in agreement with the minister of coal and energy.

Re: Article 6 of the Decree:

## Article 12

(1) Energy suppliers are obligated to give energy customers energy-industry advice within the context of customer service.

(2) Counselling services going beyond customer service (occasional, individual, verbal counselling which can be given on the basis of general knowledge and experience with a comparatively small time expenditure) are remunerable and must be scheduled through a contract as a scientific-technological service.

Re: Article 7, Paragraph 2, of the Decree:

Article 13

- (1) The kreis council must examine the hard coal and coke delivery possibilities on request in coordination with the energy combine.
- (2) Suppliers of solid fuels are authorized and obligated to enter into contracts on hard coal and coke shipments with energy consumers whom the kreis council has confirmed the delivery possibility.
- (3) Confirmations from the energy combine regarding future connection and delivery possibilities for electric energy, gas, and thermal energy are:
  1. Approval for the energy demands connected with site investigations for the particular project;
  2. The offer to enter into a long-term economic contract to prepare energy deliveries;
  3. Approval for the use of electrical household appliances with connection values of more than 1 kw without any movable connection, in accordance with specifications.

Re: Article 8, Paragraphs 1-3, of the Decree:

Article 14

- (1) If the connection of a customer system to the public supply network or the expansion of the connection system cannot be accomplished within the context of the energy combine's current plans, the energy customer may be permitted to do the work or to have the work done at his own expense; refinancing can be worked out. If the customer declares that he wants to do the job, this must be used as the basis of the decision regarding energy source use within the context of Article 17 of the Decree.
- (2) If the work it is supposed to do within the context of current plans cannot be done, the energy combine must specify a target date by which this will presumably be possible.
- (3) In the cases covered by Article 8, Paragraph 3, of the Decree, the energy combine may allow connection or expansion under the condition that the customer do the work or have the work done at his own expense. In the case of electric energy consumer plants, several parties interested in getting connections should join to form a customer community (community for the operation of a centrally connected customer plant). Refinancing can basically be worked out only with a customer community that is connected to the supply network with a standard voltage of more than 1 kv.



Re: Article 8, Paragraph 5, of the Decree:

Article 15

(1) This requirement may be instituted by the energy combine basically only if there is no other piece of land between the piece of land of the party that was given the requirements and the piece of land of the third party, unless the owner or legal agent of that piece of land is ready to grant the third party joint user rights.

(2) The party given the requirements may demand commensurate compensation from the first party for joint use of his installation and his piece of land.

(3) On the basis of the requirement issued by the energy combine, participating parties should agree as to the details of joint use, particularly regarding the following:

1. The type of line and its layout;
2. The connecting station;
3. The start and duration of construction work;
4. The scope of joint land use during construction activities;
5. The coordination of necessary maintenance measures;
6. The type and amount of compensation.

If no agreement is arrived at, each participant may sue for the conclusion and development of a corresponding contract.

Re: Article 9, Paragraph 3, of the Decree:

Article 16

(1) Output share covers the interval of time of at least on calendar month, with the exception of the cases covered in Article 17, Paragraph 2.

(2) Energy customers must pass the "output" quotas on to the appropriate energy combine by the specified deadline. If the deadline is not complied with, the energy combine must, until the forwarding of the "output" quotas, release temporary output shares on the basis of the output shares for the corresponding period of time during the prior year.

(3) Energy customers, which are not obligated to prepare energy plans, are given output shares by the energy combine on the basis of the provisions of Article 5.

Article 17

(1) Capital assets operators and enterprises are authorized to request the redistribution of output shares from the energy combine for the better accomplishment of the plan tasks in their sectors for a period of at least one month.

(2) To cover a short-term additional requirement for electrical energy, gas, or thermal energy, which arose within one month, the energy combine may, upon request, release an additional output share.

#### Article 18

(1) Output shares take effect on the basis of a written ruling from the energy combine, amendments take effect after the delivery of the new written ruling.

(2) The energy combine may release global output shares to energy consumers in keeping with requirements and possibilities.

(3) The energy combine is authorized to cut the output shares in case of insufficient utilization; the capital assets operator must immediately be informed of this.

Re: Article 9, Paragraph 4, of the Decree:

#### Article 19

(1) The content of the written evidence pertaining to compliance with permissible consumption of energy sources may be determined by the energy combine or the Ministry of Coal and Energy.

(2) If the energy supplier publishes printed forms for the evidence, the energy customer must use them.

Re: Article 9, Paragraph 5, of the Decree:

#### Article 20

(1) So long as and to the extent that no "consumption" quotas has been issued for thermal energy, the preliminary figure [estimate] for the quantities of permissible consumption will be determined by the quantities agreed upon in line with the permissible space air temperatures in the energy supply contracts.

(2) Compliance with the "consumption" quotas or the preliminary values must be documented by energy consumers, who are obligated to turn in reports, through state energy plan accounting.

#### Article 21

(1) Energy consumption beyond estimated figures for the quantities of permissible consumption is allowable if and to the extent that it serves for the procurement or generation of energy sources or if it results from the operating procedures used for the plants for the generation of electric energy, gas, and thermal energy, as prescribed by the operational management agency.

(2) In case of thermal energy delivery, it is necessary to agree upon regulations in the energy delivery contract, especially also regarding technical and organizational measures, which will avoid impermissible consumption. If the thermal energy supplier exceeds the "consumption" quotas, provided this is due to surplus delivery

to energy customers, this can be considered only within the context of the appeal procedure; Paragraph 1 is not applicable.

#### Article 22

(1) An energy customer who is obligated to submit reports and who has impermissibly used up energy sources must, by way of economic penalty, pay ten times the amount of the average industrial sales price for the energy source.

(2) Impermissibly consumed quantities of energy sources and the resultant amount of the penalty must be determined through a ruling and must be communicated to the energy consumer. The energy consumer who can claim coverage under the provisions of Article 21, Paragraph 1, must, by the 15th of the month following the close of the accounting month, submit to the energy combine the amount and the cause of the excess energy use in a manner capable of being reviewed and examined.

(3) The energy combine is responsible for issuing the ruling and the central agency for efficient energy use is responsible to an energy combine.

(4) The ruling must be related to months or quarters in keeping with the determinations of the minister of coal and energy and, with relation to liquid fuels, those of the minister of the chemical industry, and must be forwarded or handed to the energy customer.

#### Article 23

(1) The ruling according to Article 22, Paragraph 2, may be appealed. The appeal may be filed within a period of 4 weeks after forwarding or hand-delivery with the manager of the energy combine, by the energy combine with the director of the central agency for efficient energy use, and must be justified. An appeal has a postponing effect.

(2) The appeal must especially be approved in its entirety or in its corresponding parts if the energy customer proves that:

Energy consumption was permissible in accordance with Article 21, Paragraph 1, or

The engineering conditions at the plant, considered as the prerequisite for the attainment of the planned specific energy consumption norms or targets could not be established or could not be established in time for reasons which he could not have any influence over or

Energy consumption was caused by major deviations in outside temperatures from the mean values that constituted the basis for energy planning.

(3) As for the rest, the provisions of Article 35, Paragraphs 2 and 3, of the Decree, apply accordingly.

#### Article 24

(1) Energy customers in the state economy, which work on the basis of economic cost accounting, must finance economic penalties from "nonplannable costs."

(2) Central and local government agencies and state institutions must finance economic penalties from surplus earnings or reduced expenditures from their budgets. If in-house funds of a state institution do not suffice to finance the economic penalty, the local council responsible for it must make the funds available from its own resources, including the budget reserves.

(3) The economic penalty must be paid within a period of two weeks as of the final effectiveness of the ruling.

(4) Upon request of the energy combine, the economic penalty is to be enforced like a fine. Economic penalties which have been collected must be turned over to the central budget.

Re: Article 10, Paragraph 4, of the Decree:

#### Article 25

(1) The establishment which has been required to stockpile is obligated to enter into a storage contract with the enterprise designated in the requirement.

(2) The enterprise designated in the requirement will direct the use of the quantities stockpiled. In so doing it is bound by the operational instructions from the bezirk council.

Re Article 11 of the Decree:

#### Article 26

(1) The following are operational management agencies:

1. For electric energy: the State Main Load Distribution [Division], the area load distribution [divisions], and the industrial load distribution [divisions];

2. For gas: the State Main Gas Distribution [Division] and the regional gas distribution or bezirk gas distribution [divisions];

3. For thermal energy: the territorial thermal energy distribution [divisions] and, to the extent that there are no territorial thermal energy distribution divisions for the particular territorial supply systems (supply network regions), the thermal energy suppliers.

(2) Other load distribution agencies for electric energy are the network command stations, the circuit command stations, and--to the extent that they have been given tasks involving control and regulations--the transformer plants and power plants. Network command stations are also gas distribution agencies.

(3) The tasks, rights, and duties of operational management agencies must be carried out by the agencies mentioned in Paragraph 1 in accordance with the delimitations that have been spelled out. If centralized management of the supply system or the circuits control sector is temporarily nonoperational, the tasks, rights, and duties --until restoration of normal conditions--are shifted to the agency of load or gas distribution which is next in line with the ability to accomplish those tasks.



(4) In the cases covered in Paragraph 3, Sentence 2, circuit control sectors on the same management level, which have remained connected to each other or which are again connected to each other, must--until restoration of normal conditions--be managed by the load or gas distribution agency as if it were an agency on the higher management level in whose circuit control sector the largest available output capacity is located. Authority may be changed until restoration of normal conditions.

#### Article 27

(1) Operators of energy generation plants are obligated immediately to report to the appropriate operational management agency any requirements issued by the agencies of the State Office of Technical Surveillance as well as special events which have caused or which might cause an interruption or restriction in energy generation.

(2) For plants which are still in the trial operation phase, the investment client and the general contractor must work out the operating procedure with the appropriate operational management agency. This must if necessary be based on the agreements among the particular superordinate agencies.

#### Article 28

(1) Peak load times in electric energy supply must be announced by the State Main Load Distribution [Division]. Enterprise energy management and the behavior of other energy consumers must be geared toward that.

(2) The State Main Load Distribution [Division] is fundamentally responsible for issuing instructions and handing down rulings in accordance with Article 11, Paragraph 3, of the Decree.

Re: Article 12 of the Decree

#### Article 29

(1) The step systems for electric energy and gas supply are to be worked out, broken down by winter semester (October to March) and summer semester. The documentation for this must be coordinated by the government agencies responsible for the supply sectors with the Ministry of Coal and Energy by the specified deadlines.

(2) The supply steps must include those energy consumers who are technologically in a position to tap output offered on short notice.

#### Article 30

(1) A customer who has been included in a step system will get, from the energy combine, on the basis of the values coordinated between the government agency responsible for the supply sector and the Ministry of Coal and Energy, a written ruling as to the step limit. He is obligated:

1. To listen to the step call-up on the radio of the GDR and, if he is included in steps which are not announced over the radio, to accept the step call-up at any time;

2. In case of call-up of energy increment cancellation steps, he must restrict energy consumption as specified;

3. Take preventive measures which are justifiable within the national economy and which are designed to prevent or diminish damage due to consumption cutbacks.

(2) The obligation of energy customers regarding the specified restriction of consumption in connection with the call-up of energy increment cancellation steps is not affected by the award of output shares.

#### Article 31

Articles 29 and 30 are to be applied accordingly to the temperature steps.

#### Article 32

(1) The thermal energy supply step systems are to be worked out subdivided by winter semester and summer semester. They require approval of the kreis council and step systems for the bezirk [capital] city furthermore require coordination with the bezirk energy commission.

(2) The written ruling concerning step limits is issued by the energy combine or other thermal energy suppliers.

Re: Article 31, Paragraph 3, of the Decree:

#### Article 33

(1) An urgent population requirement exists if solid fuels are needed to guarantee the supply of the manufacturers of commodities involved in basic daily necessities, the functional capacity of installations of national education, of the health and social welfare systems or to cover similar needs, if necessary also in order to be able to ensure the minimum supply of the households of the citizens.

(2) The establishment which is required to supply [energy] and the beneficiary party must enter into a contract. If this is not possible at the time the solid fuels are issued [delivered], this should be done within 3 working days.

(3) The necessary expenditures arising for the establishment that has been given the requirement in connection with delivery from stores and replenishment of stores must be reimbursed by the beneficiary party. This does not affect regressive claims.

Re: Articles 11-13 of the Decree

#### Article 34

The instructions and rulings handed down by the operational management [section] must be documented. The documents must be kept at least 2 years, unless other legal regulations call for longer periods of time.

Re: Article 14, Paragraph 2, of the Decree:

#### Article 35

(1) On the basis of the planning regulations and the specific branch guidelines, the operators must determine the requirements for maintenance work and spare parts manufacture through other enterprises.

(2) The urgency of damage repair in terms of the national economy must likewise be confirmed by the Ministry of Coal and Energy.

(3) The maintenance requirements must be arranged in terms of priority by the capital assets operators within the context of the state target figures that were issued. Government agencies responsible for supply sectors are authorized to redistribute the balance sheet shares in the particular sector if the extra-plan maintenance work should exceed the balance sheet shares of the particular capital assets operator.

#### Concluding Provisions

#### Article 36

The following implementing regulation for the rescinded Energy Decree of 9 September 1976 (GBL, I, No 38, P 441) now applies in the form of the Second Implementing Regulation to the Energy Decree of 30 October 1980 (GBL, I, No 33, P 321):

Second Implementing Regulation of 10 September 1976 to the Energy Decree--Energy-Industry Norms and Targets--GBL, I, No 38, p 452, in the version of the Amendment Decree of 16 April 1979, GBL, I, No 13, p 97.

#### Article 37

(1) This implementing regulation takes effect on 1 January 1981.

(2) The following rescinded at the same time:

First Implementing Regulation of 10 September 1976 to the Energy Decree--Management, Planning, Plan Implementation--GBL, I, No 38, p 449,

Order of 8 November 1979 Amending the First Implementing Regulation to the Energy Decree, GBL, I, No 40, p 384,

Order No 2, dated 21 January 1980, Amending the First Implementing Regulation to the Energy Decree, GBL, I, No 5, p 43.

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CSO:2300/251

**BANK'S ROLE IN ECONOMY ANALYZED**

**Budapest KÖZGAZDASÁGI SZEMLE in Hungarian No 6, Jun 81 pp 641-649**

**[Article by Matyas Timar, president of the Hungarian National Bank: "The Hungarian National Bank in the Services of Economic Policy"]**

**[Text]** As the central bank of the Hungarian People's Republic, the Hungarian National Bank participates in the process of national economic planning, helps to formulate the system of regulation that serves the objectives of economic policy and, through its everyday work, strives to aid the realization of the objectives contained in the plan.\* In accordance with its tasks and functions, the Hungarian National Bank works hard to consolidate economic equilibrium and to preserve the forint's value. The credit policy directives that government approves for five-year periods and annually, and which specify the principal credit limits and terms, play an outstanding role in the bank's work.

During the drafting and implementation of the Fifth Five-Year Plan, the Hungarian National Bank--in cooperation with the planning, financial and other organs that manage the economy--upheld the aspects of restoring equilibrium, supported in its standpoints the efforts in this direction and, in its practical work, strived to promote their realization.

During the drafting of the Fifth Five Year Plan and of the annual plans in particular, we upheld the standpoint that the economy's growth rate in the given period had to be made subordinate to the considerations of economic equilibrium. We felt that the necessary equilibrium could be achieved at a slower growth rate of output than earlier, until we could significantly improve our production structure.

In agreement with the government's economic policy objectives, we urged moderation of the growth rate of accumulation, in order to preserve the living standard already attained. We strived to slow the growth of investment and of inventories as well. From this we expected a reduction of the volume of

\*Based on a report on the 1976-1980 activity of the Hungarian National Bank, presented at the 16 April 1981 session of the National Assembly.



unfinished investment that ties down a significant proportion of national wealth, without participating in production. We also anticipated that, by limiting the number of new investment starts and channeling the available resources to the investments in progress, for their rapid completion, we would gain new capacities that could contribute already during the plan period toward improving the balance of trade. We supported those investment plans that increased the country's export capacity, and the ones where the relatively short construction time and quick startup of capacities promised a rapidly attainable export surplus.

We strived to assert the aspects of economic equilibrium also in relation to the domestic market. In our credit practice we supported objectives for improving the population's supply, and the construction of new capacities for this purpose.

#### Investment Credits

During the past five-year plan period, the Hungarian National Bank contributed nearly 120 billion forints of credit toward investments totaling 511 billion forints that the enterprises and cooperatives undertook on the basis of their own decisions. For these development projects the enterprises used more than 300 billion forints of internal and other resources, while the state budget provided approximately 85 billion forints in the form of direct and indirect state aid.

Among the external sources of financing investments we encourage credit as the primary source because we find that the credit conditions provide a stricter system of requirements, one that in development policy can best promote the efforts to restore economic equilibrium. It is necessary, of course, to undertake also investments that at present can be financed only with more favorable state loans, but we believe that the proportions in this respect must be improved, and the role and share of investment credit must be increased.

The credit scheme that we introduced to increase our country's export capacity wrought a significant change in development policy under the Fifth Five-Year Plan. Because conditions on the world market changed to our disadvantage and import became more expensive, it was necessary to give preference to such development projects in order to restore economic equilibrium. The Fifth Five-Year Plan earmarked 45 billion forints for such credit. (Hungarian public opinion, too, referred to this credit scheme as the "45-billion-forint credit limit.") Investors obtained the credits approved under this scheme on terms and interest rates more favorable than usual. We expected that about 75 to 80 billion forints' worth of investment for the expansion of export capacity would be realized with this credit limit. Actually--exceeding the original concept, with the government's approval--we extended loans totaling 94 billion forints, and this made possible the realization of about 100 billion forints' worth of investment for the expansion of export capacity. In full knowledge of the results, we may safely say that this investment program has been successful and achieved its

objective. This form of credit financing will have to be continued also under the Sixth Five-Year Plan, from the approved credit limit of 78 billion forints.

Some of the significant development projects in this area are as follows:

--The Taurus Rubber Industry Enterprise (Taurus Gumiipari Vállalat) has started the production of steel belted radial tires for trucks and farm machinery. This development project has made possible additional export of 26.5 million dollars a year.

--The Pízza Chemical Works (Pízzamenti Vegyiművek) established production capacity for starting material to produce detergents; in this way it has been possible to substitute domestic production for 10 to 12 million dollars' worth of import a year.

--The Kibanya Pharmaceutical Factory (Kibanyai Gyógyszerárnyaló) and Chinoin have built production capacities for pesticides and their active ingredients. These development projects are closely related to the CMEA agrochemical agreement. They allow the economical exchange of products and provide allocations for hard-currency export.

--The Hungarian Railroad Car and Machine Factory (Magyar Vagon- és Gépgyár) obtained credit to develop the production of engines and chassis. On the basis of these two development programs, the factory in Győr will earn 14 million dollars a year from engine exports, and its earnings from the export of chassis will increase from 60 million dollars in 1981 to 110 million dollars in 1984. There will be significant export opportunities also to socialist countries.

--Significant development projects have been undertaken also in the food industry. For example, the Martfü Vegetable Oil Factory (Martfüi Növényolajgyár) earned nearly 30 million dollars in 1980 by developing its production capacity. The Kaposvár Meat Combine (Kaposvári Húskombinat) is earning about 27 million dollars of foreign exchange a year.

--We made a huge total of credits available for the development of crop production--including the expansion and mechanization of the production of bread grain and corn, and the introduction of industrialized crop production--and livestock production. The increased output achieved in this manner improved the population's food supply and also expanded the raw material base of the food industry.

--The success of the program to provide credit for the expansion of export capacity has been enhanced also by the many hundreds of small investments undertaken by enterprises and cooperatives. The overwhelming majority of these investment projects proved successful.

Within the framework of the credit scheme to expand export capacity, we were able to approve about 2000 credit applications by enterprises and

cooperatives. The government's decision to increase the credit limit enabled us to avoid having to curtail the approval of credit applications for this purpose. The total amount of the rejected credit applications was not high, which is an indication of the enterprises' thorough work. It also reflects that the overwhelming majority of the credit applications were well founded.

An important result of the scheme to provide credit for the expansion of export capacity is that we have been able to persuade our enterprises and cooperatives to place greater emphasis on export, which also means greater emphasis on quality, technological development, and productivity. All this, of course, provided a significant financial advantage for the country. The approximately 100 billion forints of investment for the expansion of export capacity under the Fifth Five-Year Plan produced a total direct and indirect export of 3.2 billion dollars.

In 1980 (by when several significant investment projects were completed) the increase in export was 1.2 billion dollars, and the increase in net foreign exchange earnings was 800 million dollars. These results contributed significantly toward the realization of the equilibrium-oriented economic policy announced at the end of 1978. We may justifiably expect that the completion and startup of the investment projects still in progress will further increase the results to date.

In addition to the results and successes, mention must be made also of the difficulties and problems. The results to date of this credit scheme are based on the fact that 70 percent of the participating enterprises and cooperatives not only met but overfulfilled their targets, thus compensating for the shortfall of the remaining 30 percent. It is very important that the lagging enterprises and cooperatives catch up as soon as possible, fulfill their targets and contribute to the expected extent toward the improvement of external economic equilibrium. Opportunities to make up for the lag do exist. An investigation of the cases shows that the lags are due in part to major or minor delays in completing the investment projects, and thus there is reason to expect that the assumed targets will be fulfilled subsequently. In other instances the lags are due to marketing difficulties caused by recession, but results can be achieved also in these cases through suitable marketing work. The quality of marketing and pricing must be improved to consolidate the results to date of the credit scheme for the expansion of export capacity, to substantiate further progress, and to eliminate shortfalls. We must know not only how to produce well, but also how to sell well!

We used also the other half of the available credit limits to improve external and domestic economic equilibrium, although not directly through the expansion of export capacity. Among these credit limits allow me to single out the support of development projects for energy conservation. The conditions of such credits are likewise favorable if the investment can be recovered--within a reasonable period of time--from savings of energy. We are aiding with credit also development projects that serve to

improve the population's supply, by increasing the market allocations and expanding the assortment. We are devoting close attention to the development of agriculture and the food industry.

By serving the objectives of the national economic plan, our investment-credit policy has promoted the strengthening of multilateral relations with the socialist countries, primarily with the Soviet Union, and realization of the Complex Program adopted by CEMA. These development projects aided the construction of capacities with which we were able to fulfill our assumed obligations and to promote the expansion of cooperational relations.

We wish to apply also in the future the proven principles of our investment-credit policy, even though our practical work requires improvement. Development projects that improve our external economic equilibrium will continue to receive priority also in the future. Credit will be provided primarily for the expansion of export capacity, but we will devote increased attention to providing credit also for development projects that permit permanent and economical import substitution, and within this particularly the rationalization of energy consumption. It is necessary to support with investment credit the development concepts that promote the processing of wastes and the reuse of raw materials and basic materials. We will provide further credits for investment projects that will enable us to fulfill the obligations which we have assumed within the framework of socialist cooperation.

In addition to the credits that serve to improve external market equilibrium, of course, it is necessary to finance also the development projects that expand the market allocations for the population's supply.

The credit limits available under the Sixth Five-Year Plan are not ample, and the credit conditions had to be made stricter accordingly. The profitability criteria in conjunction with investment credits have increased. The interest rates, too, have been raised somewhat. The higher interest rates are warranted by the fact that the cost of funds has risen significantly in recent years. At the same time we will maintain the system of preferences, and in the case of investments for the expansion of export capacity we will refund a proportion of the interest if the enterprise fulfills its obligations. The terms of the credits have not changed.

#### Credits for Working Capital

An important task of the Hungarian National Bank is to finance the working capital necessary for uninterrupted production and trade. In this context we must mention inventories, their development, and the management of inventories by the enterprises and cooperatives. Our inventory situation remains unfavorable, which also means that there still remain significant unutilized reserves in the management of inventories. For the production of national income we are using larger inventories than what would be warranted, and this ties down significant resources that could be used more efficiently for other purposes. Whereas we are using 3.7 percent of our



gross domestic material product for inventory accumulation (on average over a period of eight years), abroad--in countries whose level of economic development is more or less the same as ours--this proportion is significantly lower.

The high level of inventories is unquestionably related to the inadequate organization of our processes of production and distribution, to the shortcomings in our trade and supply, and to the weaknesses of cooperation between enterprises. A significant proportion of our enterprises and cooperatives do not devote adequate attention to improving and streamlining the management of their inventories.

In its practice the Hungarian National Bank strives to compel the enterprises and cooperatives to improve the management of their inventories. The changes introduced in 1980 in the financing of working capital also serve this purpose. According to these changes, the enterprises must finance from their development fund any permanent increase in inventories, and thus the allocations from the development used to increase inventories reduce the enterprises' ability to undertake investments.

Although the share of bank credit in financing working capital is not very significant (about 15 percent on average), we have important tasks also in this area of financing. When we act with appropriate consistency in setting the conditions and particularly the terms of credits for financing working capital, we are not only protecting the interests of the national economy but are also serving the interests of the enterprises. When we take care to provide credit only for the output that can actually be sold, we are promoting the desired balance of supply and demand.

The inventory situation showed a relative improvement in 1979 and 1980, partially as a result of the efforts to improve management, and partially because the slower rates of economic growth acted in the direction of reducing the buildup of inventories.

Further significant efforts are necessary in this area. We must improve the work of trade, because it is common knowledge that less stock is needed for efficient inventories within trade than when each user strives to maintain his own inventory of the entire range of materials and parts. Besides improving the quality of trade's work, however, a change must be achieved also in the manner in which the enterprises and cooperatives operate.

#### Monetary Circulation

The Hungarian National Bank maintains the accounts of the enterprises and cooperatives, and transacts the nation's monetary circulation. This work is extensive in its scope and requires great accuracy and speed. In the course of this work the bank maintains contact with thousands of enterprises and cooperatives each day. The Hungarian National Bank transacts about 450 billion forints a month as transfers between accounts, and in addition there are between 30 and 40 billion forints of cash transactions each month.

We are continuously modernizing the transaction of the monetary circulation, and we are using the most advanced equipment for this purpose. We are striving to spread the noncash forms of payment. The National Savings Bank (Országos Takarékpénztár), for example, is introducing personal checking accounts and is striving to popularize transfers to personal savings accounts.

We are gradually computerizing the processing of transactions involving transfers between enterprise accounts. This increases the velocity of the circulation of money, makes the credit balances available to the enterprises sooner and provides them with up-to-date information on the state of their accounts.

#### Relations Between the Bank and the Enterprises

The Hungarian National Bank's relations with the enterprises and cooperatives --in accordance with our system of economic management, and with the principles of enterprise independence and accountability--are characterized by cooperation that is based on equality and mutual agreement. This relationship is reflected also in its legal form: the Hungarian National Bank concludes account contracts with the enterprises and cooperatives, and it extends them credit on the basis of credit and loan contracts.

The bank provides credit in accordance with the credit policy directives approved by the government, on the basis of the generally known criteria of credit worthiness. Credit worthiness is one of the criteria for the evaluation of enterprises. Accordingly, an enterprise is credit worthy if it operates profitably, markets regularly and meets its payment obligations. From the viewpoint of the national economy, assertion of the requirements of credit worthiness provides a guaranty that the money placed in circulation by providing credit will be returned through sales, and consequently the released purchasing power is matched by a suitable supply of goods. This is of fundamental importance from the viewpoint of preserving the value of the forint. Maintenance of credit worthiness is also in the interest of the enterprises and cooperatives, because in this way they can avoid future payment difficulties. In a given case the rejection of a credit application may compel the enterprises and cooperatives to review their activities to date, and to correct possible shortcomings.

In its relations with the enterprises, the bank assigns an important role to advising the enterprises. The Hungarian National Bank provides information for the enterprises on the soundness of their developmental concepts, and in a given case also on the credit rating of the partners. In foreign-trade deals it is particularly important that the enterprises consult the bank in due time to obtain information on the credit rating of their foreign partners.

When speaking of credit worthiness and solvency, I must mention the fact that in recent years many enterprises encountered difficulties in meeting their payments. In the wake of the 1 January 1980 modification of the system

of regulation, some enterprises encountered losses, while at others the incentive funds were insufficient to meet the obligations assumed earlier. It is likewise indisputable that depressed demand on the world market and the stiff competition for market shares placed in a difficult situation some of our enterprises whose export volumes were considerable. In accordance with our intentions, the modified system of regulation and modified price system better revealed the weaknesses of the enterprises' work, their uneconomical activity.

Our government recently adopted resolutions to bridge the problems of the enterprises that have gotten into financial difficulties. These resolutions state that it is the task of the enterprise or cooperative to eliminate the loss or shortage of incentive funds, i.e., to restore efficient operation or to raise it to a suitable level. To eliminate the loss or shortage of funds, the enterprise must mobilize its reserves and use up its reserve fund, risk fund, and even its depreciation if necessary. If all this proves inadequate, then the enterprise's developmental concepts must be reviewed, and its intentions must be adjusted to the possibilities. In a given case the sale of unnecessarily accumulated fixed assets and inventories may be one of the means of eliminating the loss or shortage of funds. The enterprise must also create conditions for profitable operation, by transforming its product structure and by raising the economic efficiency of production.

In solving their problems, the enterprises that have encountered financial difficulties are receiving assistance also from the financial organs. Such assistance is in accord with the principles outlined above: an enterprise can expect assistance from the financial organs only if it can guarantee, on the basis of an elaborated realistic program, that the conditions of economical operation will be restored within a short time. For such an enterprise the bank will provide a temporary loan, or will reschedule repayment of the credits provided earlier.

In cases when an enterprise is unable to restore the conditions of economical operation, however, we must not hesitate to discontinue uneconomical production, to merge the enterprise into another enterprise or, as the last resort, to liquidate the enterprise.

#### International Banking Operations

The Hungarian National Bank's international activity--in close connection with Hungary's foreign trade--is likewise broad and intensive.

Economic, technical and commercial cooperation with the socialist countries plays a fundamental role in our international economic relations. In the same manner, close contact and cooperation with the CEMA countries and their banks play an outstanding role in the bank's activity.

Within CEMA relations, the CEMA countries' two joint banks--the International Bank for Economic Cooperation, and the International Investment

Bank--help to finance economic cooperation, and we are participating in the work and management of these banks.

The task of the International Bank for Economic Cooperation is to provide credits to offset small and temporary deficits in the clearing accounts of member nations, maintained in transferable rubles. Although payments between CEMA countries are proceeding smoothly in general, it may happen that we, too, borrow from this bank, and provide credit to it at other times.

The International Investment Bank provides long-term credits to finance the member nations' investments. We, too, have borrowed from this bank, to finance the MAV (Hungarian State Railways) electrification program, and the reconstruction or expansion of the Hungarian Cable Works (Magyar Kábelművek), Ajka Alumina Factory (Ajkai Timfoldgyár) and Szekesfehervar Light Metal Works (Szekesfehervari Könnyűfémü). The International Investment Bank provided credit for us also for building the Hungarian section of the Orenburg gas pipeline.

We will continue to cooperate with the socialist countries' banks and the CEMA countries' joint banks, on the basis of the proven principles and practice. We will strive to further strengthen our relations with them, to promote the intensification of our countries' economic cooperation, to effectively realize within the shortest possible time the ideas contained in the Complex Program.

Our external credit policy is linked to our domestic investment-credit policy. We wish to restore our economy's equilibrium not by limiting necessary imports, but by expanding our export capacities. Therefore a credit scheme that expands our convertible export allocations (i.e., the export allocations that can be sold profitably on any market) is a fundamental issue of our credit policy. This credit scheme applies also to our foreign borrowing.

We are maintaining relations with capitalist banks in accordance with our economic interests, with strict application of the principle of mutual advantages. For our economic development objectives we have borrowed in the past and intend to use credits also in the future. Under the Fifth Five-Year Plan we financed with foreign credits our program for the expansion of export capacities. We deem it important that Hungarian banks obtain the foreign credits, and that our enterprises appear as cash customers on the market. This is advantageous for our enterprises because they are able to obtain better prices and other terms when they pay cash than when they buy on credit. The fact that we use capitalist credits only for our development and investment objectives guarantees that the credits can be repaid on schedule. We will continue to apply this principle in our borrowing policy.

The fact that we provide credit for other countries plays a role in supporting plans for the expansion of export. Sales on credit occur mostly in conjunction with our machinery export, in accordance with international



customs and norms. Within the limits of our economy's ability, moreover, we are providing credit also within the framework of the socialist countries' cooperation, primarily to the developing countries. When we provide credit, we do so on the terms and conditions that are customary internationally.

In its international money-market operations the Hungarian National Bank relies also on its foreign network. We have banks in Vienna and London, and agencies in New York, Frankfurt, Paris and Zurich. We are stockholders of the CEMA joint banks headquartered in Moscow (International Bank for Economic Cooperation, and International Investment Bank), of the Bank for International Settlements headquartered in Basel, and--jointly with six big foreign banks--of the Central European International Bank (Köz-európai Nemzetközi Bank) headquartered in Budapest.

The Hungarian People's Republic has a good credit rating on international money markets. Our country's political stability and equilibrium-oriented economic policy play a fundamental role in this, but contributing factors are our domestic investment-credit policy, particularly our efforts to expand export capacity, and our exchange-rate policy that provides incentives for the expansion of economical export and ensures for us a position of strength in negotiating prices internationally. As a result of all this, our balance of trade and balance of payments showed a rapid and substantial improvement during the past two years. Our credit rating has been enhanced by the fact that we have always met our debt-servicing obligations, fully and on schedule. Thanks to this, we are able to ensure on favorable terms the international borrowing necessary for the development of our economy, despite the stricter conditions and crisis phenomena noticeable on international money markets.

We continue to regard preservation of the forint's relative stability and moderation of the effects of foreign inflation as the principal objectives of our exchange-rate policy. We are striving to clarify the economic picture also with the instruments of exchange-rate policy and by introducing uniform exchange rates for the forint, so that our national currency may perform its money functions on a higher level. This can accelerate the desirable transformation of our economic structure, improvement of efficiency, and consolidation of the economy's domestic and external equilibrium.

#### Hungarian National Bank and Its Relations With Other Domestic Banks

According to the bank's balance sheet at the end of 1980, its assets--including gold and foreign-exchange reserves, and securities--totaled roughly 582 billion forints. Its liabilities--in addition to the bank's capital stock and reserve fund, the principal items here are the deposits of economic organizations, state budget and other domestic financial institutions--totaled roughly 572 billion forints. The bank's stock of currency and coins accounted for nearly 73 billion forints within this total. The bank's 1980 profit was nearly 10 billion forints, most of which was transferred to the state budget.

The Hungarian National Bank conducts its activity in close cooperation with Hungary's other financial institutions. We are cooperating with the State Development Bank (Allami Fejlesztési Bank), the task of which is to finance investments decided by the state, and to provide state aid for the investments decided by the enterprises.

The Hungarian Foreign Trade Bank (Magyar Kulkereskedelmi Bank) functions in conjunction with our foreign trade. From an expansion of its activity we expect, among other things, that the financing will intensify of the small and intermediate plants' and industrial cooperatives' investments for the expansion of export capacity.

The Hungarian National Bank maintains close and varied relations with the National Savings Bank. The latter holds the population's savings deposits, and the financing of housing construction plays an outstanding role in its credit operations. Here I wish to note that during the past two years the population's borrowing from the National Savings Bank exceeded the net growth of savings deposits. The National Savings Bank also handles the funds of the local councils.

The Hungarian National Bank regards as its fundamental task to continue to serve, through its own specific means, our party's economic policy under the Sixth Five-Year Plan.

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## POTATO CULTIVATION, PROCESSING DISCUSSED

Warsaw PRZEMYSŁ SPOŻYWCZY in Polish No 3, 1981 pp 86-89

[Article by Tadeusz Kluk: "Potatoes--An Important Reserve of Food Economy"]

[Text] The world food crisis is becoming more acute. Stocks of raw materials and food items are shrinking, and their prices on the world markets are increasing. All the countries of the world are examining their possibilities of increasing food production without resorting to imports. The production of animal feeds is being intensified. Agricultural production is receiving more and more benefits in order to insure possibly higher returns from agricultural enterprises. The processing industry is being developed.

Potatoes are basic agricultural product, their world production being in excess of 300 million tons. About 69 percent of the world's potato crop is produced in the European countries and the USSR, and of this, 16 percent is produced in Poland.

The most important potato producers in Europe are: The USSR, Poland, the FRG, France, Holland and the GDR. In this respect, Poland occupies second place. In most countries, potato production is oriented mainly to satisfy internal requirements for edible potatoes and only in some countries toward the export of early potatoes. In Poland and the FRG a high percentage of potatoes is destined for feed. In Holland, the percentage of arable acreage used in potato production is very high, however, the percentage of potatoes used as feed is low. That country has the most specialized potato production and steadily exports 25 percent of all crops and earmarks over 45 percent for industrial processing.

The potato acreage in Poland is slowly decreasing and oscillates between 2.6 and 2.4 million hectares, however, potato harvests remain on relatively the same level. That is, with the exception of bad years like 1980. This results from increasing yields, from 177 quintals per hectare [q/ha] in 1970, to 203 q/ha in 1979. Despite a considerable increase in yields, this indicator, as compared to other countries, is still comparatively low. In 1976, the potato harvest per hectare in Holland was higher by 110 q, in FRG by 53 q, France by 49 q and in Switzerland by a huge 199 q. From the above, it is apparent that we have still great possibilities for increasing our yields.

The effectiveness of potato exploitation in Poland is lowered by the factor of high losses in storage. They amount to 12-18 percent per year, while in other countries they do not exceed 7-10 percent. It is foreseeable that in the immediate future

cultivation of potatoes in Poland will play an important role in Polish agriculture. Despite a decrease in the cultivated acreage, an increase in harvest to over 50 million tons is expected. It is a very important element in the food and feed balance of our country. The seed value of 200 q of potatoes which is the yield from 1 hectare, equals 50 q of rye, which currently equals the yield from almost 2 hectares of that grain's cultivation.

According to data supplied by the Institute of Agricultural Economy, for the economic year 1978-79, profits from potato production in individual farming were only slightly lower than those from production of wheat or sugar beets. One also has to consider that potatoes are planted on the lowest class soils, soils which we have in abundance.

There are several factors which are responsible for the long-held tendency to limit the acreage used in potato cultivation.

In the first place, it has to be noted that the potato is losing importance as a feedstock in multifarm complexes, commercial farms which raise swine herds. The larger the concentration of swine husbandry, the more grains replace the potato, because on larger farms feed is supplied in fluid form. This reduces the amount of work needed for feed preparation, however, it increases consumption of grains and imported feeds. It seems that the planned limitations of large-farm slaughter-animal production will restore to the potato its significance as the basic feed.

#### Potato Consumption

Potato consumption in Poland assumes approximately the following forms:

--for feed for hogs, and eventually other animals, about 35 million tons, or about 78 percent of the crops;

--for human consumption, about 5 million tons or 9-10 percent of the crops;

--for industrial processing, i.e., distilleries, starch works and for edible potato products (dehydrated products, flakes, grits, fries, etc.), about 8-12 percent, or approximately 4.5-6.0 million tons.

In Poland, and the neighboring countries, potatoes are still one of the basic food articles, despite the fact that during the last few years there has been a distinct tendency to limit the intake of carbohydrates and increase the consumption of proteins. Currently, potato consumption in various countries, calculated per inhabitant, varies from 60 to 160 kg, as follows: Austria 83 kg, Sweden 83 kg, the FRG 87 kg, Czechoslovakia 100 kg, the GDR 144 kg and Poland 160 kg. In the Western countries, with a decrease of potato consumption in its natural state, there is a dynamic increase in consumption of products obtained from potatoes as a result of industrial processing.

#### The Growing Importance of Potato Processing

Market analyses prove that an ever-increasing portion of potato crops will be destined for industrial processing. Currently, in highly developed countries, up to 50 percent of the crop is earmarked for processing. An ever-increasing importance is being assumed, in addition to processing for industrial purposes (starch, dehydrated feeds), by processing for human consumption.



As compared to the rapid development of potato processing in West European countries and North America, the current status of this industry in Poland is unsatisfactory.

Many new production lines have been purchased for the production of bulk potato flakes in order to broaden the product range. It is foreseen that in the coming years there will be considerable increase in the production of edible potato products such as cubes and flakes and also an increase in the supply of dehydrated potato products. These are basic components required in the manufacture of many products in the refrigeration industry such as noodles, dumplings, potato pancakes, [meat] balls, etc., which are in great demand on the market. The processing industry in highly developed countries, by offering a variety of products, has increased the demand for processed potato products despite the fact that most of them contain more calories than fresh potatoes.

The processing of fresh potatoes into edible products, calculated per inhabitant, is as follows: United States, 28 kg; Holland, 25 kg; FRG, 15 kg; GDR, 5 kg. In this respect, the situation in Poland presents a completely different picture. Fresh potatoes continue to dominate consumption, while processed products are currently consumed at a rate of only 2 kg per inhabitant.

#### World Potato Commerce

World potato commerce has a rather marginal importance, amounting to 3-4 million tons yearly. The principal potato exporter is Holland, which sells about 1 million tons per year. Among the other countries, France and Italy specialize in edible potatoes.

The principal importer of potatoes is the FRG which imports about 1 million tons of potatoes yearly. A large purchaser in the European markets is Great Britain, which imports about 200,000-300,000 tons per year.

Poland has a small participation in the world potato market, exporting about 400,000 tons yearly, with purchasers being the CMEA countries. A small amount of potatoes is exported to European capitalist countries. The sale of potatoes by Poland is not a specialized or preferred branch of Polish exports. A traditional product in the international markets is potato flour [starch]. The principal producer and exporter of starch is Holland.

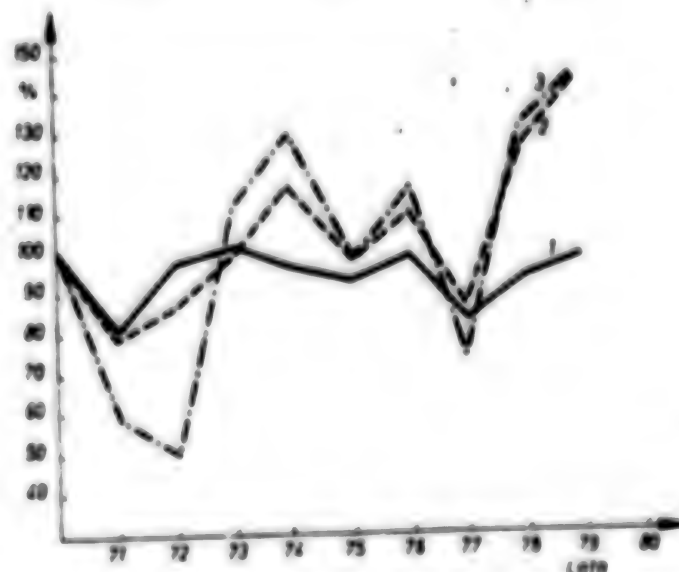
In recent years, Poland has exported an average of about 15,000 tons of this item, and this export was subject to variations. During 1970-74, export of starch was twice as high. In the following years, as a result of a potato shortage, Poland was even forced to import starch. A particularly high import is projected for 1981. In the immediate future, it is again planned to increase starch production.

It appears that with an increase in starch production one can also foresee a development in the processing of edible potato products in the country and for export, particularly potato cubes and potato flakes. A condition for increased production is above all, an increase in potato yields and product availability during the entire year. In this connection, there must be an improvement in the application of production forces to the increasing needs and also construction of airconditioned warehouses for storage of some 60,000-80,000 tons of potatoes.

## Potato Harvests in Poland

Commercial production of potatoes depends on many factors, two of which—climatic factors and total crops—are most important. The deliveries of potatoes depend in turn on trends in the development of hog husbandry and how prices shape up relative to other agricultural products. The size of the harvest in Poland is being maintained between 43.3 million tons (1965), and 51.92 million tons (1973). In 1980, (exceptionally unfavorable) the potato crop was about 26 million tons. Analysing potato harvests according to particular voivodships in 1979, it can be stated that of 49 voivodships only 22 achieved crops in excess of 1 million tons, as follows: Siedlce, 2.7; next Lublin, 1.9 and Bialystok, 1.8 million tons. Production in excess of 1.5 million tons was achieved in nine voivodships. Average yield in 1979, amounted to 203 q/ha. Yields in excess of the average were achieved in 22 voivodships, the highest yields being obtained in Szczecin (238 q/ha), Slupsk and Koszalin (233 q/ha), but Siedlce had an average yield of 215 q/ha.

## Potato Purchases for Industrial Processing



Rys. Zbiory i zakup ziemniaków w Polsce w latach 1970-1979 (wskaźniki dynamiki 1970 = 100%); 1 - zbiory ogółem, 2 - zakup ogółem, 3 - zakup do przerobu ZPZ

Graph Potato crops and purchase in Poland for years 1970-79. (Dynamic indicator year 1970—100 percent)

### Key:

1. Total crops
2. Total purchases
3. Purchases for processing by Potato Industry Plants (ZPZ)

Potato purchases for industrial processing, i.e., distilleries, starch works, production of flakes, grits, fries, etc., has in recent years reached a level of 4.5-6.5 million tons. Purchases projected up to 1990, are to reach a level of 9 million tons. In 1979, this amounted to 7.4 million tons. Highest purchase levels were noted in Siedlce, Lomza, Pilsk, Maciejów and Ciechanów voivodships.

Between total crops, total purchases and purchases for the potato-processing industry one cannot find a direct relationship. This is represented in the graph. While crops deviate from the average in some years, total purchases and purchases for industry show very sharp deviations (graph). This is due to several factors. Among others, this situation is due to the influence of price relationships, the general situation on the food and feed markets and also, to a considerable degree, to organizational factors.

Purchase prices for agricultural crops place the potato in a privileged position because the price was 578 zloty for 1 ton of potatoes in 1970, however, in 1979 it rose to 1,702 zloty, i.e., more than three times over (3.22 x). One ton of potatoes for human consumption sold for 2,265 zloty in 1979. This indicates that the difficulties in potato purchasing for industry were based not only in the area of price relationships. The low technical level of the purchasing base, lack of mechanization for loading and unloading, the small number of weight scales, etc., do not offer any encouragement for increasing deliveries to industry. The regions located in the immediate industrial-base area of the potato industry plants, which are better equipped with transportation machinery, are delivering to industry a very large percentage of their crops (Lomza, Pilsk and Konin voivodships).

#### Distribution of Potato Industry Plants in Relation to Raw-Material Base

The distribution of potato industry plants is unprofitable. Most factories and the best processing strength are located in the western territories of the country, however, the raw material for processing is found in greatest quantities in central and eastern Poland. This necessitates transportation of large masses of potatoes from east to west, which, given the current transportation situation of the country, is becoming an increasingly difficult task. In order to reduce movement of potatoes, a new plant has to be built in the northeastern territory (Lomza) and the starch works in Ława has to be expanded.

On the other hand, due to multiple, unavoidable possibilities of ecological damage to drainage, the industry had to shut down three starch works which operated in connection with their own developed raw-material bases. Their shutdown caused a costly lengthening of the season and an increase in potato transportation from east to west. If one compares the distribution of starch works and potato purchase bases, it becomes apparent that in four general regions: northern, central-western, northwestern and southern, industry has 76.7 percent of its processing facilities and only 50.2 percent of potato purchases. The remaining four general regions account for 23.3 percent of processing facilities and 49.8 percent of potato purchases.

The current distribution of potato-processing plants has a haphazard character and is not responsive to the binding fundamental rule of harmonious distribution of industry in the entire country relative to the elements of productive forces. It is worth noting that in the potato industry, each unit of finished product requires transporting and consuming 6.4 units of raw and auxiliary materials.

Purchases for industry are conducted in only 36 voivodships, factories are located in only 12 voivodships. That means that the entire quantity of potatoes purchased in 24 voivodships must be transported to the other 12 voivodships, those which have starch works. During the season, industry transports about 350,000 tons of potatoes over an average distance of 199 km. Thus the average yearly transportation effort in the entire industry amounts to about 235 million ton/kilometers.

#### Plan for Development of Potato Industry

In accordance with current assumptions in 1990, the potato industry should produce 40 percent more starch, 100 percent more dehydrated edible products and four times more dehydrated feed. In order to fulfill these assumptions it is necessary to increase the means of production considerably. In order to achieve the necessary minimum level of processing facilities it is critically necessary to construct two large potato industry combines with a capability to process 1,500 tons of potatoes daily, earmarked for starch, and an annual capacity of 40,000 tons for processing of dehydrated edible potato products.

#### Location of New Plants

One of the most important problems connected with new plant construction is their location. It is necessary that the new plants have an assured raw-material supply base in their immediate vicinity, thus permitting fulfillment of their purpose, i.e., a minimum of transportation work and costs.

In order to examine the possibilities of finding such locations, a full program of possible potato-purchase locations throughout the entire country was conducted during the target season, allowing for a slight reduction in acreage and for an increase in productivity to 230 q/ha. Following confirmation of existing potato-purchase regions and existing plants, the territories currently not utilized were isolated, to include those located furthest away from existing plants. These are Bialystok, Siedlce and Biala Podlaska voivodships. As complementing territories one may include: Lublin, Zamosc and Chelm voivodships. For the theoretical localities accepted for the explorative study, a computer program was run by the Calculations Information Center of the Poznan Academy of Economics, using the ODRA 1300 computer, with a standard transportation program (publication 13106), for optimization of potato transport on the scale of the entire country. On this basis, it has been confirmed that the most profitable location would be Miedzyrzec Podlaski or Lesice. The average weighted radius of potato supply would, under these variables, measure about 50 km, and the average distance of potato transport, on the countrywide scale, would be reduced by 79 km (from the present 199, down to 120 km). A second location for a potato industry plant could be Ciechanowiec, which would receive potatoes from Bialystok and Ostroleka voivodships. A computer program was also run using this variable. With the Ciechanowiec location, the radius of potato supply would be 67 km.

The above-mentioned location variants for potato-processing industry plants would contribute to exploitation by the industry of the richest potato regions in the north-eastern and eastern voivodships. Construction of these plants would contribute to a further increase in potato harvests in their immediate vicinity, as has already been confirmed in several factories--in accordance with the law of Thunen--food-industry plants increase the interest of farmers and activate the development of the raw-material base.

The experiences of 1980 indicate an urgent need for a complete rearrangement of potato economics in agriculture and industry. They also indicate a necessity to increase industrial processing of potatoes so that as soon as possible considerable reserves of starch could be manufactured for the lean years.



## MINISTER DISCUSSES FORESTRY SITUATION

## Problems, Priorities Specified

Warsaw ZIELONG SZTANDAR in Polish 21 May 81 pp 3, 4

[Interview with Waldemar Kozlowski, minister of the forestry and timber industry, by Pawel Popiak; date and place not given]

[Text] [Question] Colleague minister, the Polish economy is currently undergoing a deep crisis. How is forestry affected by it?

[Answer] Despite many problems and difficulties, the forestry crews are working at a pace similar to those of the preceding years. Nevertheless, we are still unable to put our forestry resources in order, we are experiencing difficulties particularly in removing windfalls and snow damage as well as remaining deadwood which generally present a considerable value as material for further processing or fuel. We must apply with particular care additional organizational efforts in regard to fuel, among others, by utilizing the village population in recovering this kind of wood and by purchasing additional equipment for money obtained from wood exports.

The situation in forestry differs for a number of reasons from that in other branches of the economy. First of all, the timber harvest is still greater than it should be in a well-functioning forestry economy. In fact, the utilization of forests on a scale greater than is allowed by their potential has taken place for many decades. In the interwar period it even led to the reduction of the forests by 600,000 hectares. In People's Poland this process was reversed, and the forest area increased by more than 1.6 million hectares, nevertheless the amount of wood removed from forests has exceeded forest recovery potentials. Since 1979 the Forestry Ministry has been gradually reducing the clearing areas and we hope that by 1982-83 we will reach a state allowing for the beginning of the reconstruction of the resources of Polish forests.

[Question] I have had the pleasure of talk with your two predecessors who were seated behind your desk and who expressed a totally different opinion, namely, that the wood increment in our forests is greater than its depletion....

[Answer] The past mistake was that the amount of wood removed was compared with the current increment without taking into account the original state of the forests; after all, the amount of wood which has reached cutting age and of wood which will reach this age in 20 years is visibly small. Today the volume of our forests is about one-third short of what it should be, that is, it amounts now to some 1 billion instead of some 1.3-1.4 billion cubic meters.

[Question] How much time is needed to restore the forests to their desired volume?

[Answer] No less than 20-30 years. In order to achieve such a stage, it is necessary to reduce consistently the clearing areas in mature forests and simultaneously liquidate the existing several-year backlog in occasional and seasonal utilization (windfalls, snow damage, deadwood).

[Question] What you have just said seems to reflect a common belief that forest exploitation and utilization do not always well serve the social interest or the best interests of our country. After all, forests and their goods are among the most important natural resources of Poland....

[Answer] As I have already said, we are on our way to good utilization of forests; the beginning has been made. The backlog should be quickly liquidated, because it goes beyond the issue of quality wood, and concerns the creation of conditions for the propagation of secondary pests. I am confident that certain government decisions--and we can count on them--will allow us to solve this problem.

[Question] Forestry is a huge factory, the workplace of 120,000 people who often place the forest's interests above their own. How do you see the problem of people working in the forest--they work hard and yet seem to be unnoticed and unseen? A good example of this attitude can be the recent day of foresters and woodworkers, which--as in previous years--passed unnoticed.

[Answer] Indeed, this is a very important and serious problem. Technological progress instituted in the country in the last few years has had a relatively small impact on forestry. And yet in the last 8 years the number employed in forestry has declined 35 percent. Most people look at forests and people working there in the context of vacation, mushroom gathering, camping and hunting. Hardly anybody notices foresters, particularly at times when they work the hardest, that is during winter and spring. Their tremendous efforts and sacrifices fail to get attention. Each year several hundred sawyers--often young--retire on disability pensions as a result of the ill effects of vibrations caused by the saws. This is a very tragic consequence of the use of mechanical saws.

As to other matters.... Let us just mention the standard of living, which despite efforts aiming at its improvement leave much to be desired: transportation for schoolchildren, real medical care, housing. These matters are considered by us now among the most important, however, they require more effective and consistent realization. All three trade unions active among the forestry employees demonstrate in fact great interest and involvement in the broadly understood labor problems of their members.

[Question] Considerable numbers of forests are private property. What are the currently most important problems and difficulties caused by this fact?

[Answer] This problem has various aspects. Individual owners in some regions of the country own very good forests; they take good care of them and in return get concrete benefits. This is particularly true in southern Poland. In other parts of the country, farmers usually own young forests planted on barren land or the poorest soil. These forests have only a pioneer character and it is too early to count on

any effects of their cultivation. We estimate that two-thirds of these 1.7 million hectares of farmer forests will bring economic effects some time in the future. So, these forests are of concern to us. We try to assist in their proper cultivation and utilization by at least technical and organizational means.

In the last few years great problems have been caused by property changes and transfers in farmer forests. Therefore we also hope that the assistance rendered today to individual farmers will have a decisive effect on its stabilization, and thus stop property changes and transfers in farmer forests. We also anticipate revisions in the regulations concerning the aggregation of forest land, which is a complex problem requiring a definite solution.

[Question] You have been the head of this ministry for only a few months. Unlike many other ministers, particularly those in the past, you have reached your position through promotions within the same "firm;" thus, you know it and its problems in and out. Right! So many things, so many problems, but what would you like to start with first, what is of the greatest concern to you?

[Answer] In addition to matters requiring systematic and long-term action which I have already discussed in part earlier, there are many "burning" problems requiring immediate attention. The first of them is the combat with another attack on our forests by primary pests. This is the fourth year of a catastrophic invasion by the gypsy moth on an area of 1.8 million hectares. I do not have to add that the launching of a massive chemical attack requires tremendous financial and organizational efforts. However, the preparations for this attack, despite many deficiencies, have to be seen in a positive light.

Despite the socially conscious attitude of forestry employees in the past, the demands for better pay do not weaken. Although it is not a matter which can be easily resolved today, I would like--in response to the foresters' wishes--to resolve it as soon as possible. And finally, a really dramatic matter: to improve the equipment of forest crews with machines and tools and spare parts for them.

[Question] You are also in charge of hunting, a very controversial area today....

[Answer] I did not expect to become the chief hunter of Poland, but what can I do--if necessary.... The criticisms addressed at damages caused by hunting animals--certainly very justified--concerns relatively small areas and requires immediate action. Due to shoot-offs in February and March, the number of animals was considerably reduced; in two regions, the reduction also affected the number of deer (excluding hinds, of course). Now it is necessary to prepare very well for the next hunting season.

And in general I think that the estimate of the saturation of the hunting grounds made 4 years ago was too optimistic. This matter must be totally reviewed, and perhaps it may be necessary to deny the population access to certain wooded areas.

Damage caused by the hunting animals should not be viewed only in the context of compensations; most of all we ought to be concerned about the attitude toward agricultural production and farm owners. And this point of view must come to fruition.

[Question] How would you like to end this interview, and thus introduce yourself to the readers of ZIELONY SZTANDAR?

[Answer] I would like to touch upon one more matter which shows improvement: the relationship between the village and the forest. It brings--and always has--hopes and debates. In recent years there have been more hopes and fewer debates. I think that the United Peasant Alliance can do much to improve this relationship; bring about better understanding of foresters of the needs of agriculture and better understanding of the village of the needs of the forest.

Thank you for the interview.

#### Pests, Pollution, Material Supplies

Warsaw DZIENNIK LUDOWY in Polish 26 May 81 p 6

[Interview with Waldemar Kozłowski, minister of the forestry and timber industry, by PAP; date and place not given]

[Text] [Question] Recently prepared studies, among others by the Forestry Ministry and the League to Protect Nature, confirm the legitimacy of people's fears in regard to the condition of our forests, attacked by numerous diseases and pests and over-exploited by man. What is the chance then that forestry will be able to reconcile two functions: economic as a producer of raw materials, and social, as an immensely important factor in the natural environment?

[Answer] This chance still exists. The production potentials of our forests have not been reduced. However, the rate of the reconstruction of the forests' production potentials has been halted. First of all, our forest volume, measured by the availability of mature wood, is too small. In the state forests, it should have reached 1.3-1.4 billion cubic meters of wood, while we have reached the level of just 1 billion. This nearly 30 percent deficit is very high.

There are many causes of this situation, the main one is the unfavorable age structure of our forests. Although in the past we were able to increase the area of forests in Poland by some 1.8 million hectares, thus liquidating the war losses through replanting trees on clearings and barren land, nevertheless these are young forests, and there is a lack of older forests with 80- to 100-year old trees. Those which reached maturity qualifying them for economic clearings (do not confuse them with cultivation clearings) constitute barely 19 percent of the total forest area when the appropriate percentage should have reached 30 percent. In terms of the demands for wood by the economy, this is a very unfavorable situation.

Thus in order to satisfy these demands the wood was taken not only from these small resource areas, but also from forests which were too young for this purpose.

[Question] So the alarmist statements suggesting that the forests were considered mainly as the source of production benefits were right. Does it mean that now, when the protection of environment seems to be more than a slogan, one can expect that the forestry economy will benefit from it as well?



[Answer] In the present economic situation in the country, it will be impossible, of course, to make a big breakthrough in this area. However, we can see certain improvement already. This year we will reduce the cuttings of the least available thick wood by about 1 million cubic meter in comparison with last year.

This is not enough, however. In order to accelerate the process of regeneration of the forest resources the exploitation of this raw material ought to be reduced by another 1 million cubic meters. Only then we will equalize clearing with the yearly increment of wood in the forests, and thus stop the depletion of basic forest resources.

We would like to achieve this level in 2-3 years at the latest.

[Question] This year forestation covered some 52,000 hectares, that is, less than in the previous years. Does this mean that we do not have enough space for forests?

[Answer] On the contrary. There are provinces, particularly in southeastern Poland, where forests constitute from several to 10 percent of the total area while the average for the entire country is 27.6 percent.

This has a negative effect on the climate of these regions; it creates problems in the water economy, etc. Forestation can only partly reduce these effects. However, an introduction of forestation on a larger scale there and in other regions depends on the situation in agriculture. I have in mind here the introduction of greater order into the spatial system of agricultural economy and an increase in agricultural production. Progress in these areas will determine the possibilities of taking over other lands for forestation purposes. We are striving at covering 30 percent of the total territory in our country with forests; this will be close to the optimum for our geographic conditions.

[Question] It is a common knowledge that each year we suffer tremendous losses--billions zlotys--as a result of diseases and pests, and that several hundred thousand hectares are endangered by industrial dusts and gases....

[Answer] Both of these phenomena are closely connected. Industrial damage, which we have been observing in all but two northern provinces, weakens the natural resistance of trees and makes them even more defenseless when attacked by diseases and pests. Therefore, whenever possible we must take preventive action against the effects of industrial emissions (by changing the quality of forests), accelerate nursing efforts and "clear" forests of trees downed by winds, big snowfalls, etc. The forests contain now a great amount of such raw material, which is of primary value to the panel and cellulose-paper industries.

[Question] Since we have touched upon the wood industry, how would you describe its situation at present? Some 70 percent of its raw materials are of domestic origin. It would seem then that it has an easier situation than other branches of industry?

[Answer] Certainly; however, the situation is not the same in all branches of the wood industry. In those more closely connected with forestry, e.g., lumber and panel production, the results are better than in furniture production and the cellulose-paper industry, which depend on the cooperation with other ministries and on raw materials and products obtained from imports.

In the case of the furniture industry, it lacks, among others, paints, varnishes, glues, and in the case of the paper industry it experiences insufficient supplies of cellulose. The supply of furniture on the domestic market satisfies only 80 percent of the demand, and the possibilities for increased production in the current financial situation are slim. The furniture industry has made efforts to increase the supply of furniture by utilization of domestic raw materials and products and by more efficient use of imported materials. Some technological changes have been made in the construction and finishing processes, etc. However, such solutions can be used only to a limited degree due to limitations imposed by product quality. Therefore, such efforts can only partly relieve the lack of products; they will not resolve the problem.

As to the situation in the cellulose-paper industry it can be illustrated by the fact that one-seventh of the production potential of the paper-manufacturing plants is unused due to the lack of cellulose. The production figures for the first quarter of this year have shown that the manufacture of paper and cardboard failed to reach the planned level of 26,000 tons. The opening date for the cellulose manufacturing plant in Kwidzyn is constantly postponed due to delays in construction. Now it is assumed that the plant will be ready in July. If the construction crew finally completes its task, the first amount of cellulose will be produced in the third quarter of this year, with visible effects of production being felt next year, and full production achieved by 1983. The cellulose supplies from Kwidzyn will permit manufacture of 200,000 tons of paper and cardboard a year. The supply of these products per capita will then increase by 5-6 kg, that is, increase to 47 kg a year. This index is much lower than the present indices for many other countries, e.g., Czechoslovakia, the GDR, Hungary.

To sum up, even with maximum utilization of the opportunity which the high share of domestic raw materials in our production gives us, the imports of many materials will still be indispensable.

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## DEPUTY PETROLEUM MINISTER ASSESSES 1981 PLAN FULFILLMENT

Bucharest SCINTEIA in Romanian 23 Jun 81 p 1

[Interview with Gheorghe Vlad, deputy minister of mines, petroleum, and geology, by Dan Constantin]

[Text] One of the major economic problems to which our party's leadership is devoting the greatest attention, is to assure the basis of raw and energy materials, primarily by rationally utilizing domestic resources. This is a highly relevant issue, which has also been extensively discussed at the recent general assemblies of workers, held in preparation for the Second Congress of Workers' Councils, which will soon meet in Bucharest. In the light of these concerns, we present a conversation held with Gheorghe Vlad, deputy minister of mines, petroleum, and geology, about the actions taken by Romania's petroleum workers to fulfill their tasks during this first year of the current five-year plan.

[Question] The conclusion of the conversation we held six months ago was clear: "Yes, we can extract more oil!" Have the results obtained since then confirmed the belief you expressed in SCINTEIA?

[Answer] Even at the end of last year, as a direct result of the indications provided by Nicolae Ceausescu during working visits at petroleum units, of analyses of the activity in this vital sector of the national economy, and of the Work Conference of the Central Committee of the RCP with active members in the domain of geology, all petroleum units have established a number of highly important technical and organizational measures, aimed at sustaining the recovery of the petroleum industry, and at continuing to increase crude oil production during 1981. Based on sound analyses, acting with great perseverance to eliminate the shortcomings that had occurred in our activity, it was determined that it is entirely possible for the production of extracted crude oil to be 9 percent higher than that of 1980, for the volume of geologic crude oil resources to grow by 33 percent, and for drilling to increase by 10 percent. The achievements of the first five months largely confirm the realism of these plan provisions, which we might add, we consider as minimal.

[Question] More concretely, could you specify the results achieved by petroleum workers since the beginning of the year?

[Answer] In the first place, I should say that the concentration of forces on deep-well drilling, the completion of this drilling, and the exploitation of the deep wells, has disclosed new reserves of oil and gases at Draganu-Calina and Palei in Vilcea County, at Stoenita-Gorj, Contesti-Bacau, and Umblaresti-Galati, which will increase the volume of recoverable reserves and oil production. We deem it a remarkable achievement that our specialists have recently succeeded in placing in production the deepest extraction well in Europe at Draganu-Vilcea, which draws oil from 5180 meters; this has eliminated the skepticism of those specialists who believed that no oil could be extracted from deeper than 4000 meters. The total drilling volume during the first five months exceeds the plan by 16,000 meters; a significant increase over last year--of 45.8 percent--was achieved for deep drilling. The qualitative indicators for drilling are also superior to those of last year. Drilling speed for instance, was increased by 2.6 percent, mostly by reducing unproductive time by nearly 25 percent; and in well drilling, the duration of the disassembly-transportation-assembly cycle for installations was reduced by 2-3 days. New and improved technologies, such as jet and optimized drilling, have also been applied.

[Question] How are the programs of measures--many of them already applied--been reflected in higher oil production?

[Answer] There is no question that the efforts of our petroleum workers are constantly concentrated on the full achievement of this year's oil production plan. A number of units have announced the fulfillment of the plan for the first half of the year. The results obtained during the first five months of this year are superior to those of last year, and guarantee a continued growth of extracted oil production. Although still below the plan's values, the average daily production for May was 1318 tons higher than that of January, and 852 tons higher than that of the same period of last year. These increases are based on the application of extraction programs individualized by deposits, constant observation of well behavior, and adoption of appropriate technologies imposed by the deposits. At the same time, we have acted more perseverently and responsibly to reduce the number of inactive wells, better organize the activities of intervention teams, reduce the time before drilled wells are placed in production, and intensify geologic-technologic measures to increase the inflow of oil in extraction wells. Among the collectives which have carried out a successful activity during this year, making an important contribution to the oil production growth, are those from the extraction derricks in Braila, Moreni, Modirzau (Bacau), and Suplacu de Barcau.

We are convinced, however, that the results could have been better, and that through a more decisive application of established measures, and the elimination of shortcomings which persist in our activity--some units do not fulfill their tasks, primarily because of their own organizational problems--the extraction of oil could reach the plan's level. That is why all the workers in this sector, imbued with their special responsibility to assure greater amounts of oil for the national economy, are determined to recover in the shortest possible time the oil production shortages incurred during the first part of the year.

Without underestimating in any way our own shortcomings and our responsibility to act more firmly to eliminate them, I believe it is necessary to mention that our units have been faced with a number of difficulties created by contractual obligations that were not met by some units in the metallurgical, the machine construction, and the chemical industries.



[Question] You mentioned the same problem six months ago. Has no improvement taken place since then?

[Answer] Unfortunately, the situation has not changed very much. This year as well, there are serious shortages in the deliveries of tubular materials, drilling rods, motors for drilling machinery, drill bits, tires, and some chemicals for drilling and oil recovery processes. I emphasize once more that our activity cannot be carried out at the level of the demands placed upon us by the party leadership, and of the quantitative and qualitative tasks which we have to fulfill, without a more substantial support from suppliers of materials and equipment for the petroleum industry. It is true that a number of measures have been taken this year to honor under better conditions the economic contracts made with petroleum industry units. We have received assurances about this from the managements of the respective ministries. But for the time being things are not running as they should.

It is obvious that the responsibility for achieving the oil production planned for this year is primarily ours, who work in the petroleum industry. But the development of the basis of raw and energy materials--within which oil extraction plays an important role--is one of the determining factors for the country's socioeconomic development at the present stage. That is why, in our efforts to completely fulfill the plan's tasks, we must receive a prompt, consistent support from those industrial branches and units which collaborate toward a larger extraction of oil through the equipment and materials which they must deliver to us.

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## IMPORTANCE OF TECHNOLOGY TO INDUSTRIAL DEVELOPMENT STRESSED

Bucharest ERA SOCIALISTA in Romanian No 8, 20 Apr 81 pp 16-18, 45

[Article by Valeriu Geoceonica, vice-chairman of the National Council for Science and Technology]

[Text] The supreme goal of the RCP program for building a materially developed socialist society and advancing Romania toward communism, is to consistently improve the material and cultural well-being of the entire population, and to raise the degree of civilization of our nation. To this goal are subordinated all efforts for developing and modernizing the structure of the branches of the economy, and for accelerating the growth of the national income. The party program promotes scientific research and technologic development as levers for production, and entrusts them with the mission of bringing Romania within the ranks of nations with an intermediate development.

The entire policy for increasing the role of science and technology and for assigning priority to their development, stems from the thinking of Nicolae Ceausescu, theoretician and leader of the vast activity for building socialism and for establishing the conditions for advancing Romania toward communism. As early as 1965, on the basis of a rigorous analysis of existing conditions, achievements, and great objectives for the future, the secretary general of the party pointed out that: "The program for the development of the socialist society, ... for satisfying the ever growing needs of the national economy, are intimately connected with scientific progress, and with intensified fundamental and applied research in all fields."

In keeping with the demands of material production and the needs of social life, the party has been and is assuring the constant development of applied as well as fundamental and long range research, so that it may prepare in good time the technical and scientific bases needed to fulfill long range forecasts and five-year plans. To this end we have created and constantly improved the institutional system for policy, organization, and coordination of technologic progress, assuring the mobilization of the entire creative potential, through the integration of research and teaching efforts with production.

Starting with the political significance of promoting science and technology during the next period, the organization, coordination, and management of scientific research and technical engineering activities have been raised to a higher level

through the measures adopted by the Political Executive Committee of the Central Committee of the MCP, regarding improvements in the activity and operation of the National Council for Science and Technology (CNST)—a party and state organ of a deliberative and broadly representative nature. The Plenary Session of CNST of June 1979 has played an essential role in fulfilling these measures.

In recent years, the CNST together with economic ministries, has developed a network of scientific research and technologic engineering units, primarily in the fields that make major contributions to material production, at the same time taking a number of steps to increase the efficiency of research efforts as well as their contribution to the introduction of new products and technologies, and to the mechanization and automation of industrial processes.

At the same time, the orientation of research has been improved and the organizational structure of research institutes perfected, so as to increase their technologic contribution to the more rapid assimilation of new products in industry. Institutes have developed better endowed microproduction facilities, and depending on specific needs, tooling and fabrication preparation shops. The contribution of research institutes and technologic engineering has been substantially increased in the design of industrial objectives with complex technologies. Institutes have undertaken with greater enthusiasm long range research in mathematics, physics, chemistry, biology, and technical sciences. In addition, new research institutes have been founded for economic and sociopolitical sciences.

For a better coordination of research activities in the important directions adopted for the development of the economy and industrial branches, new central institutes have been constituted, and science academies organized for the same purpose. At the same time, CNST has initiated programs of multidisciplinary research to create a reserve of scientific and technologic solutions, especially in the valorification of new sources of energy and of mineral resources with a low content of useful substances.

An important stage in the implementation of this policy has been the 1976-1980 five-year plan, which asserted the technical-scientific revolution in all sectors of activity in our country. Original research, thinking, and technical-scientific creativity are ever more powerfully present in all branches of the economy and social life; and the results obtained during the preceding five-year plan in scientific research, technologic development, and introduction of technical progress, fully confirm the aptness of the orientations and tasks outlined by the party leadership.

Starting with the achievements obtained so far, and the requirements for Romania's social and economic development during the next two decades, a program-directive was formulated for scientific research, technologic development, and introduction of technical progress during the 1981-1990 period. This directive-program, formulated under the direct leadership and guidance of Nicolae Ceausescu, is one of the orientations established by the 12th Party Congress. It assures the necessary scientific basis to fulfill the strategy for Romania's socioeconomic development, and seeks the continued growth of material production, the modernization of the economy's structure, our country's more efficient participation in the international economic traffic, the assurance of Romania's energy independence, and an improvement in the quality of life and level of civilization for the entire population. The

formulation of the program has taken into consideration the major worldwide trends in the development of science and technology, as well as problems specific to our country under the international conditions of the deepening energy crisis, raw material tension, and greater interdependence among nations.

The program-directive is expected to be completed primarily through our own forces, but also with international cooperation in accordance with the principles of our party and state policy of collaboration with other nations.

The role and place assigned by our party to science and technology in the entire social and economic development, in consolidating national independence, in narrowing the gaps among nations, and in solving the vital problems of mankind, are strongly echoed throughout the world and contribute to promote science and technology as some of the most important priorities of developing nations.

We therefore have a broad program for scientific research, technologic development, and introduction of technical progress, we have established the goals to be attained, and we know the major directions toward which to orient Romanian scientific research. The 1981-1985 five-year plan will thus become the five-year plan of greater quality and economic efficiency, these being objectives which bring to the forefront the tasks of high responsibility that rest on researchers, technical engineers, designers, and those called upon to organize production in enterprises.

#### Raising the Technical Level of Material Production

As we know, the most recent five-year plans have represented a large effort toward industrialization on the part of Romania's economy, particularly in chemistry and machine building, both of them basic branches for the superior valorification of raw and other materials as well as for modernizing the economy and social life as a whole. Machine building continues to be pivotal in Romania's economic development through its contribution to the achievement of physical production and exportation, and through the need to constantly perfect the structure of production and manufacturing methods. That is why in what follows, we will consider machine building as representative of the contribution of science and technology to economic and social progress. An examination of the technical level reached by this branch can provide some indications of the way in which scientific research, technologic engineering, and design can have an effect in the light of the tasks outlined by the program-directive.

In terms of endowment with machinery and tooling, we note that 56 percent of the machine-tools and technical equipment specific to the machine building branch are less than 10 years old, and that only 12 percent are older than 20 years. This is a most favorable situation--even compared to the industry of some developed countries with a reputation for dynamic development, such as Japan--which is due mainly to the youth of our industry, and to the fact that as a whole, its endowment did not encounter a shortage of material means. In terms of variety, however, we observe a preference for metal cutting machines (70 percent), most of which are universal machines (lathes, borers, and grinders). Numerical control machines are still in modest numbers.



This structure and the destination of investment funds allocated so far, indicate a predilection for enterprises specializing in finished products, and whose activities are focused on mechanical processing and assembly. In exchange however, the horizontal and component industries, and that of cast and forged parts, is less developed.

The investment efficiency, expressed in production growth per invested leu and investment costs per production of goods, shows that the investment effort during this five-year plan must be directed toward the modernization of current production capabilities in the existing space, rather than toward their expansion. Similarly, the supply of cast and forged parts, components, measurement and control instruments, and modern means of plant storage and transportation, can contribute substantially to higher investment efficiency.

This raises the point of achieved technologic capability, and attention devoted during the past five-year plans to manufacturing methods. Many projects for new facilities, raised through our own forces, lacked serious technologic studies, with the result that production areas--overdimensioned at times--were populated with an overly large number of universal machine-tools which have not always been capable of assuring an adequate production productivity and competitiveness. In a branch in which one-third of the production is intended for exportation, and which is scheduled to grow by 45 percent during this five-year plan, gaps of a strongly technologic nature in the design and planning of machines and industrial objectives cause some of the equipment--albeit high-performance equipment--to remain under-utilized.

The completion of the standardization of machines, instruments, tools, and installations, has disclosed the need for a greater effort on the part of research and technical engineering toward a systematic design and planning of products with a small number of standardized subassemblies, modules, and components, so as to reduce assimilation efforts, extend manufacturing runs, and thus increase economic efficiency by standardizing and specializing enterprises. At the same time, the need became evident to redesign machines and tools so as to reduce material and energy consumption in production and utilization, since this equipment owes its competitiveness to such criteria.

Even if other factors are implicated on occasion, or if other organizational or financial measures impose themselves, the role to be played by scientific research, technical engineering, and design are still foremost in assuring a superior technical level for material production. During the last five-year plan already, measures were taken to increase the technical content of activities in research and design institutes, expand their production facilities, raise the number of technical engineering shops, and obtain a more active participation from researchers and technologists in the planning of new industrial objectives. But I believe that more attention must be devoted to increasing the technical capabilities of specialists in research, design, and production. This is a requirement imposed today by the higher competitiveness in international economic relations, and by the need to maintain the current rates of development under the pressure of the energy and raw materials crisis.

## Technical Training of Specialists

During the last century, science has made available to society an impressive number of inventions and discoveries, while the fundamental sciences such as mathematics, physics, chemistry, and biology, have become an inexhaustible source of ever renewed applications constantly providing new solutions to the industrial revolution, thus contributing to the progress of civilization at a rate that could not be suspected one hundred years ago. All of this under conditions in which only a portion of the discoveries and inventions have succeeded in travelling the arduous path from idea to application, from research to industrial production, many of them having been lost in what specialists call the technological pit. And while some ideas did get lost, others have wandered for a long time before reaching the shores of production.

The fact is that the pilot which guides research, inventions, and discoveries to finalization in production, is technology--who alone is capable of establishing how, with what procedures, through what material means, and with what economic effects, it is possible to exploit an innovation. Without the collaboration of technology, ideas remain unutilized or sometimes await their application for quite some time. One such example is the discovery of the phenomenon which demonstrates the influence of an electric field on a current flowing through a bar of silicon, phenomenon on which is based the operation of large scale integrated circuits and microprocessors. This phenomenon was discovered in the 1920's but could not be used in practice until 50 years later, when it became technically possible to deposit very thin films (of the order of microns, with perfectly controlled thicknesses), and when the chemicals used in fabrication processes reached an extremely high level of purity (one part per million). Examples of this kind are perhaps even more numerous than those which show that inventions are exploited rapidly.

And yet technology has not earned a first class status as a technical science. It is still considered, including in industrially developed nations, as a modest and anonymous relative of the exact sciences. Even in countries well known for encouraging advanced technologies, an increasing number of voices are pointing out that one cannot continue to train technologists in universities which strongly emphasise theoretical training in the exact sciences. One of the few higher education institutions in the United States with a technologic specialization--the Massachusetts Institute of Technology--is a private enterprise.

Under these circumstances, when such observations can be made in countries with a long technologic tradition, and when Japanese products--manufactured with greater technology and more efficiently--begin to increasingly dominate the West European market, we believe that is not without interest to bring into discussion the level and quality of the training of our own technical engineers and designers, because--and we stress this point--they are the ones who are meant in the first place to assure the technologic level of products and the economic efficiency of enterprises. It is from them that we expect a jump in quality and efficiency for our entire industry.

Despite all the measures established by the Law on Education to attract teaching personnel into research work, and to bring the schools closer to the needs of industrial production, the fruits of these welcomed legal provisions cannot be found in the technical training of future engineers and designers. Technologists and designers who are to be entrusted with the development of sub-branches such as

microelectronics, aeronautics, nuclear energy, and so on, where technical knowledge is at least of the same level of difficulty as theoretical knowledge, cannot be trained solely by increasing the number of hours of practice in production--as is currently being done--and by formulating projects with a relatively small amount of knowledge acquired in technology courses which are primarily descriptive. In order to design and build high productivity and high performance integrated circuit testers, to master technologic processes and to design installations, to conceive and create a whole industry of electronic components--as our industry's development currently requires--you need a large amount of technologic knowledge, which our educational system cannot offer under its present structure and formation.

Judging by the content and level of the technology courses that are being taught, such as mathematics or physics, some teachers and students have formed the impression that technology requires studies at an intermediate level, and that in general, it is the concern of technicians, or at most of sub-engineers. Other teachers, more aware of the need for technologic studies, hope that this knowledge will be acquired during the apprenticeship years of the young graduates. This could be a partial solution, but without a well-formulated program, and without advanced specialists with a talent for teaching, technologic training is becoming transformed into a dry routine.

Post-graduation specialization of any form, and primarily doctorate studies, are also foreign to technical engineering and design, while topics of a theoretical nature are being preferred. Some of us appear to be convinced that in the technologic sciences a doctor must communicate in formulas, and thus in solutions--however clever they may be--but only on paper.

And yet the question does arise: How were technologists and designers trained? Under these conditions, the technologists and designers must obtain their training and education by themselves. It is true that any education process is ultimately a self-education one, but this requires adequate conditions; this is difficult for education, and while it is not easy for industry either, the latter has more facilities. Because in the absence of proper technology laboratories, pilot installations, the necessary and constant contact with production, and without access to diverse and voluminous documentation, one cannot become either a technologist or a designer.

Whereas in the exact sciences and fundamental research the first concern is the publication of results--since being the first to report is an essential condition--in technology, achievements are patented as inventions or kept as fabrication secrets. Technologic processes and manufacturing methods are bought dearly, and that is why they are strongly guarded.

Under such conditions, the information and especially the documentation of technologists and designers plays a considerable role. Access to all that is published in the world, in specialized journals, and knowledge of the most valuable achievements is of utmost importance to the training and upgrading of technologists. Yet, in this domain, we have serious shortcomings. In practical terms, information and documentation have for quite some time demonstrated great weaknesses in enterprises, institutes of technologic engineering, and even nationally. Similar shortcomings are also noted in the publication of our own technologic achievements in

specialized journals, or in their disclosure at symposia or conferences. The dissemination of valuable and efficient technologies is not always a major concern on the part of technologic organs, who also have available to them the instrument for planning technical progress.

Sometimes added to the insufficiently consistent technologic contents of technical documents we find a superficiality or even absence of well-founded and competent technical-economic studies on new products and technologies, and on new investment objectives. In some cases, the entire notification and approval operation is conducted lightly, and at other times, technical-economic fundamentation is considered as a simple bureaucratic delay.

I believe that no planning of research or investment objectives should be allowed without detailed technical analyses, without the expert assessment of the most valuable specialized staffs in the country.

This so very important role assigned to technology in the training and upgrading of engineers could seem exaggerated. But this should not suggest that our education could be purged of its valuable theoretical content, which we regard with satisfaction. On the contrary, we mean to point out that technologic education should reach the same high level. For the continued development of industry at the level of quality and efficiency which is imperative for the future, technology, the study of manufacturing methods, and technical-economic studies, must constitute the substance of activities in institutes, as well as in notification and approval agencies in ministries.

It must be emphasized that the orientations established by our party for the rapid introduction of scientific and technical progress throughout the economy and in all spheres of social life, constantly point to the primordial role which technology must occupy. It is edifying in this respect that one decade ago, the actual party and state organ charged with organizing, coordinating, and managing the entire activity for scientific research, technologic development, and introduction of technical progress, was given the name of National Council for Science and Technology.

Indeed, the world's experience as well as the realities of our economy demonstrate ever more evidently that the only way in which a discovery in any field of science comes to life and can be applied in economic or social practice, is through the intermediary of technology. It is therefore only alongside and in close association with technology that science acts as a moving factor of socialist civilization.

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**BANK OFFICIAL DISCUSSES SHORTCOMINGS IN INVESTMENT SECTOR**

**Bucharest ROMANIA LIBERA in Romanian 28 May 81 pp 1,5**

**[Interview with Dr Alexandru Olteanu, director in the Investment Bank, by Marian Dumitrescu]**

**[Text]** The progress of investment projects is a frequent topic in the columns of our newspaper. But we have felt that we are in duty bound to also examine matters relating to the procedure for applying the new economic-financial mechanism, the budgets of incomes and expenses in the investment sector, the laws in force providing them with the attribute of chief tool of worker self-management and self-administration, a supervisory factor of economic and financial activity at all organizational levels and in all the economic sectors. The plans for financing and crediting of investments, as an integral part of the income and expenditure budget, play a major role in sizing the investment costs and in determining the financial resources needed for meeting these costs. By a realistic reflection of the economic and financial potential of each unit, they must constitute an active leverage for the mobilization of all resources and completion of investment projects in the context of maximal efficiency.

During a discussion on this topic, Dr Alexandru Olteanu, director in the Investment Bank, dwelt on a few of the main issues of financial-banking activity, less spectacular in the area of investment projects, but of major significance.

**[Answer]** The new laws for the investment sector, adopted on the initiative and under the guidance of the secretary general of our party contributed to firmly establishing rigid order and discipline and also enhancing the spirit of responsibility of the collective leading bodies of economic units, centrals and plan coordinators, to reinforcing the strictness of planning, financial and banking organs in spending the investment funds. In 1981, this has been reflected in the manner of starting the investment expenses, in the concerns of all these organs, in adopting adequate measures to raise the efficiency of investments. Of course, some negative aspects can also be found. For instance, some enterprises, industrial centrals and ministries had delays, incompleteness or insufficient substantiation when they presented drafts of financing plans.

[Question] What was the consequence?

[Answer] Repeated reworking of these drafts, difficulties in the progress of analyses by the organs of the bank and of the Ministry of Finance and sometimes, tardy identification, only during execution, of the existing shortcomings. Serious difficulties in making the payments for investment projects also resulted from the delay with which some ministries and industrial centrals itemized and forwarded to subordinate units the indicators approved under the state budget for this year, namely under the income and expenditure budgets of the ministries. If we survey the plan sizing of the local resources designed for financing investment projects and the correlation with the other plan sections, we must point out that differences are still found, hence violations of the law in terms of planning resources from amortization of fixed assets and correlating these with the provisions of the amortization and completion plan. Moreover, not always the itemization by some ministries and centrals of the resources from profits conforms with the actual potentialities of enterprises. Here is an example: at the Zalău Tire Enterprise, the actual local resources are far below the volume of the installments due this year.

[Question] An essential factor in formulating the financing-crediting plans involves the as exact as possible sizing of the funds needed for financially meeting the costs for the equipment that requires assembly and that remains in stocks at the end of the plan periods. What has been found when these plans were analyzed?

[Answer] The tendency to overrequest, under plan proposals, funds for stocks of equipment, which actually means a major tie-up for the economy. If these unjustified requests had been accepted, the stocks of equipment would have gone up by several billion lei. In the context when the stocks on construction sites by far exceed the necessary amount of assembly for one quarter, when the economic resources are limited, it is evident that an increase in tie-ups cannot be accepted. The analyses made by the branches of the Investment Bank found that not always attention was paid to sizing these stocks not only in light of the purchase of equipment in accordance with the contracts concluded but also in light of backlogs in delivery of equipment from prior years. In other words, facts in the field differ from the figures determined by the planning-financial departments in some economic units.

It is a matter of basic logic that the financing plan must incorporate the resources required for payment of the installments and interest for the bank credits granted prior to the plan year. However, it has been noted that some ministries and centrals do not comply with the priorities set by the law in assignment of resources from amortization and profits for repayment of the credits granted. This results in situations such as that at the Ministry of the Chemical Industry, where the resources assigned are more than 2 billion lei below the volume of the due installments; or like the situation at the Hunedoara Metallurgical Industrial Central, where the plan has not incorporated sums for repayment of some credits granted, but others were planned for repayment of some credits ... that had not been granted (!)

[Question] Constant assurance for on-schedule repayment of obligations to suppliers of equipment and construction-assembly organizations is a basic duty of the planning-financial departments in the investment recipient units. But, as indicated in the documents at the Investment Bank, this year also is seeing a number of due payments to these organizations. Please elaborate on the impact of this situation.

[Answer] A chain blockage occurs; economic-financial difficulties also develop for those units that correspondingly completed the plan and contractual tasks allotted them; there even is also an impact on the financial and budgetary balance in the overall economy. In most cases, the arrears in making the payments result from serious violations of planning, financial, and contractual discipline. Here are a few of such categories of violations. One involves the purchase by a number of enterprises, true a small number, of imported equipment above the levels prescribed in the legally approved documents, without the recipients and the coordinating bodies involved submitting for approval the updated technical-economic indicators. Consequently, the Bucharest "23 August" Enterprise has uncleared equipment valued at 250 million lei, the Bucharest Machine Tool and Aggregates Enterprise, more than 40 million lei, and so forth. The greatest part of these expenses were started in 1979-1980 and nevertheless the ministries and importing foreign trade enterprises, to whom these sums are owed, did not take action for repayment.

Contracting for "equipment with assembly," without taking into consideration the amount of the appropriations for this purpose under the plans for financing and crediting of investments, is another source of development of arrears in payment. What happens in such a situation? The bank, based on special approvals, grants credits, the recipient units pay for the sums involved significant interest, and the financial balance of the units is affected. A warning signal to all the parties responsible must be the persistence, this year also, of the system of engaging funds for purchase of equipment with assembly above the plan provisions -- as indicated in a recent inspection of the Investment Bank on 325 construction sites with large stocks of equipment. An example of the uselessness and non-cost effectiveness of this procedure is the following case: the Braila and Adjud pulp and paper combines contracted for and already brought to the construction sites equipment valued at 80 million and 45 million lei respectively, related to investment projects for which the documentation has not yet been approved, equipment which... cannot be assembled during this year!

Briefly, these are a few of the main aspects in the area of financing and crediting of investment projects, some shortcomings that impact on the progress of work on construction sites, affect the financial balance of the economic units involved.

The shortcomings pointed out certainly are violations of the planning and financial discipline, for which the new law for the investment sector prescribes severe penalties, which the bank organs applied and will continue to apply firmly on the culprits. However, in my view, it is important to prevent

the appearance of such cases in the future. This requires placing emphasis on thorough substantiation of the indicators in the financing and crediting plans, by close cooperation among all the functional departments that are allotted tasks in this area.

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## IMPROVEMENTS NECESSARY IN SELF-FINANCING SYSTEM

Bucharest REVISTA ECONOMICA in Romanian No 21, 22 May 81 and No 22, 29 May 81

[Article by Emil Cioflan and Lazar Costinel: "Self-Financing of Economic Units"]

[No 21, 22 May 81 pp 16-17]

[Text] The heavy demands of the present stage of Romania's economic development and the urgent requirements for high quality in all socioeconomic activity, as they are soundly substantiated in the documents of the 12th RCP Congress, call for the most efficient management of the national economy's resources, more pronounced growth of economic effectiveness, and a strict regime of economy in all fields.

These vital requirements are met by the measures the party adopted 3 years ago to introduce the new economic-financial mechanism and by the party administration's intensive efforts to institute regular application of that mechanism in all units including the social-cultural and territorial-administrative ones and to base all socioeconomic activity on workers self-management and economic-financial self-administration. The measures enacted by the Plenum of the RCP Central Committee in October 1980 and by the Plenum in December 1980 and the specific tasks, guidelines and directions of outstanding importance included in Nicolae Ceausescu's speeches and explanations indicate that every unit of any kind must know what it is producing, what incomes it has, what it is consuming and what it must give to society. Nicolae Ceausescu said, "We must realize that application of self-management, self-administration and self-government is a necessity of Romania's social development and a vital aspect of economic democracy and of democracy in general." (1)

By its own efforts every economic unit must show the greatest possible profitability and efficiency and be able to repay society the funds it has received when due, and it must make the highest possible profits in order to procure the means of development and to contribute more to meet the general needs of society. The party secretary general has repeatedly pointed out that the principles of the new economic-financial mechanism, self-management and self-administration are being applied slowly and with reserves in some fields, that "the new mechanism is making headway with difficulty and encountering resistance from the old and the habit of working without thought for the economic results obtained" (2), and that some comrades and some collectives as well as some people's councils "have understood only the part of the new economic mechanism that makes it easier to spend, without very much thought of the outlays. They have not understood the essentials of the new economic mechanism, namely basing our

entire activity upon the principles of self-management, self-administration and economic effectiveness and careful management of every gram of material and every penny" (3).

The series of measures adopted by the RCP, the regulatory acts legislated since the new mechanism was introduced, and the party administration's steadfast efforts are based on the fact that application of the new economic-financial mechanism, self-management, self-administration, and steadier growth of economic effectiveness are aims of vital importance to socioeconomic activity in the present period and in the long range, and to fulfillment of the tasks assigned by the 12th RCP Congress to develop all activities and further improve the entire people's welfare and quality of life.

Among the main supports of application of the principles of the new economic-financial mechanism are self-financing of the economic units, its best possible operation, and its use as an economic lever of first importance in heightening the responsibility of the centrals and enterprises for meeting the plan indicators with minimum outlays, for mobilizing and using their entire material and manpower potential most effectively, and for managing the resources entrusted them by society with the best possible results.

The Romanian economic literature includes different views of the concept of self-financing. They differ particularly as to the scope of self-financing and the emphasis placed upon one aspect of it or another (4). We think self-financing of the economic units means their direct use of part of their incomes to form or increase the funds needed to perform their activity as efficiently as possible according to the provisions of the Uniform National Plan and to implement expanded reproduction and the social objectives (5).

We feel we are seriously deviating from the nature and functions of self-financing if we include in it, as some authors do, coverage of production costs, funds for the workers' material incentive, etc. Our chief argument in support of our view is that self-financing of the economic units is an economic process directly pertaining to their finances, to the mechanism for forming the funds needed to expand their economic activity and to implement social objectives. Essentially it is the financing of the enterprises by their own means, and it performs the functions of self-administration in the field of financial relations. Especially in view of these considerations, self-financing of the economic units is a vital aspect of application of the new economic-financial mechanism and of the enterprises' and centrals' operation on the basis of economic-financial self-administration. The latter loses much of its content and effectiveness if the principle of self-financing is not fully and actually implemented. The functions, powers and especially the responsibilities of the economic units depend to a great extent upon the formation of these funds and particularly upon the existence of the resources to form them according to the real and thoroughly substantiated needs of the respective unit. The amount of those funds will directly depend upon the level of efficiency and profitability regularly attained by the enterprise's own effort.

Without going into details about the position and functions of self-financing in the new economic-financial mechanism, we think that in view of the foregoing its role should be emphasized in close connection with the other economic aspects, processes and levers in the effective implementation of economic-financial self-administration and in considerably reinforcing the latter as a staunch economic support of workers

self-management. It is one of the most important aspects of self-administration as a method of planned management of the economic units. Self-financing is a highly important lever in heightening the economic units' responsibility for purposes of most efficient use of the part of society's single and indivisible property that is entrusted to the administration of the enterprise and central. It considerably aids implementation of self-administration primarily in the economic units, where the output is actually obtained and the workers' threefold capacity is directly fulfilled. Self-financing is one of the specific ways of achieving socialist accumulation, forming the fund for socioeconomic development on the microeconomic level, and securing a volume of funds in keeping with the units' real needs and in direct dependence on its own results, especially as regards effectiveness. Moreover self-financing is to be viewed and certainly must operate, in correlation with the other economic levers, as one of the ways of harmonizing the system of economic interests in Romania's socialist society and of combining the general interests of society with those of the enterprise and its personnel. This is accomplished to a great extent in direct dependence on effective implementation of self-financing. But as study of the data indicates, the economic units are not sufficiently motivated to increase the proportion of funds obtained through self-financing. Actually, the role that self-financing should play in good management of funds is progressing about as it did before the measures for improved economic-financial management and planning were introduced.

The figures on the balance sheet and the accounts show that noteworthy progress was made in 1978-1980 compared with the indicators obtained in the previous years. In general the centrals analyzed in the table logged major gains in commodity and net output and, in a number of cases, in profits as well. But the actual results in commodity output manufactured, in that sold and paid for, in net output and in profits are below the plan provisions or very slightly above them. On the other hand the plan for activation of fixed capital was fulfilled on the whole, and the provisions concerning the circulating assets that the enterprises and centrals actually had were considerably exceeded in most of the cases we analyzed. Therefore the evolution of fixed capital, and especially of circulating assets, was on the whole higher than the evolution determined by the indicators for the output obtained, and in many cases it was considerably higher.

It should also be noted that the percentages for the resulting correlations appear, on the level of the centrals and some larger enterprises included in our study, as absolute figures. To take as an example the Industrial Central for Technological Equipment and Rolling Stock alone, in that economic unit the shortfalls below the plan provisions in commodity output sold and paid for amounted to 2,170,300,000 lei in 1978, to 1,070,400,000 lei in 1979, and to 820 million lei in 1980. Those in net output amounted to 837.7 million lei in 1978, to 504.8 million lei in 1979, and to 887.7 million lei in 1980. The volume of profit short of the plan was 1,018,900,000 lei, 459 million lei, and 686.8 million lei respectively. But for the whole central the value of the inventory of fixed capital was maintained at the planned level in the respective years, and the volume of the total circulating assets at the close of each year exceeded the plan by 979.1 million lei in 1978, by 1,387,900,000 lei in 1979, and by 906.4 million lei in 1980. The situation is comparable in the Industrial Central for Power and Metallurgical Equipment and for Hoisting Machines and in other centrals. The examples of this kind are also quite clear in the case of other enterprises analyzed.

In most of the analyzed cases the planned level of the indicators of effective use of fixed assets was not attained. Moreover the absolute difference between the levels

Table 2. Indicators of Circulating Assets

	1	2	3	4	5	6	7	8	9	10
	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT	CIRCUIT
1. Dinamica loadurilor impru. mutabile (in %)	1969-1972 1973-1975 1976-1978	141 113	132 109	172 96	172 122	82 98	65 104	131 194	173 142	148 193
2. Ponderea mijloacelor circulante impru- mutate (in %)	1973 1975 1976	43 47 76	43 47 62	44 76 81	36 60 63	13 44 44	45 23 23	11 34 43	36 42 45	51 60 52
3. Dinamica creditelor restante si neram- burate (in %)	1969-1972 1973-1975 1976-1978	131 126	148 72	118 81	124 17	84 37	141 109	234 252	343 232	50 133
4. Diferenta intre durata unei rotatii a mijloacelor circulante efectiv realizata față de cea planificata ( zile +/- )	1973 1975 1976	-29 -43 -23	-31 -43 -43	-18 -44 -19	-17 -31 -37	-22 -29 -3	-1 -6,4 -1	-17 -14 -1	-22 -16 -9	-3 -8 -2
5. Diferenta dintre durata unei rotatii realizate in 1969 față de 1978 si 1979 ( zile +/- )	15 15	-13 +4	-43 -38	-24 -35	-28 -29	-3 -11	4 4	-4 -11	-3 -2	-4 6

1. Industrial Central for Technological Equipment and Rolling Stock
2. Industrial Central for Power and Metallurgical Equipment and for Hoisting Machines
3. Industrial Central for Technological and Chemical Equipment and Refineries
4. Industrial Central for Machine Tools, Precision Machinery, and Tools
5. Industrial Central for Electrical Engineering Motors and Materials
6. Industrial Central for the Processing of Rubber and Plastic
7. Industrial Central for Drugs, Cosmetics, Dyes and Lacquers
8. Central for Wood Processing
9. Central for Beer, Alcohol, Starch and Mineral Waters
10. Evolution of borrowed funds (in %)
11. Proportion of borrowed circulating assets (in %)
12. Evolution of overdue and unrepaid credits (in %)
13. Difference between duration of a rotation of circulating assets actually effected and that planned (days +)
14. Difference between duration of a rotation effected in 1980 and in 1978 and 1979 (days +)
15. 1) Difference between duration of a rotation in 1980 and in 1978  
2) Difference between duration of a rotation in 1980 and in 1979



of the same indicators reached in 1980 and in 1978-1979 shows a declining trend.

Meanwhile the volume of fixed capital reached the planned level and showed major gains in 1980 over the level attained in the preceding years. Of course a wide range of factors entered into the said evolution of the respective indicators. It is clear that they are to a great extent internal factors pertaining to the activity of the respective centrals and enterprises. But it is not the purpose of this study to point them out.

[No 22. 29 May 81 pp 19-20]

[Text] The above-mentioned evolutions and correlations unquestionably indicate that the centrals and enterprises are not making a sufficiently determined effort to use the technical equipment entrusted them by society as effectively as possible for a good and efficient administration.

It is clear beyond a doubt that the principle of self-financing has not yet been applied with the thoroughness and high standards required by the new economic-financial mechanism in order to heighten the responsibility of the economic units for attainment of high levels of effectiveness of fixed capital according to the tasks assigned by the 12th RCP Congress to achieve a new and better quality in all economic activity. The same is also true of the circulating assets, as indicated by the calculations in Tables 1 and 2.

The analysis of the data emphatically indicates that while the planned volume of circulating assets has been exceeded, the same is not true of the evolution of the indicators of fulfillment of the plans for the net output, commodity output sold and paid for, and profits. All those are reflected by the way the rate of rotation of the circulating assets has evolved. The tasks assigned in the plan to speed up rotation of circulating assets have been fulfilled only in some of the units to which we refer.

Let us consider the Industrial Central for Machine Tools, Precision Machinery and Tools in the light of the foregoing. That big economic unit fulfilled the plan for commodity output sold and paid for by 101.3 percent in 1978, by 95.1 percent in 1979, and by 96.4 percent in 1980, the plan for net output by 97.2, 92.3 and 97 percent respectively, and that for the total profit by 97, 86.5 and 91.1 percent respectively.\* The evolution of the volume of circulating assets used was 400 million lei above plan in 1978, 679 million lei above plan in 1979 and 212 million lei above plan in 1980, while the proportion of borrowed capital came to 57.9 percent in 1978, 68.4 percent in 1979 and 63.4 percent in 1980, with a considerable volume of credits overdue and not repaid on time. Consequently the duration of a rotation of circulating assets exceeded the plan by 17 days in 1978, by 34 days in 1979 and by 39 days in 1980.

As the elements and correlations in the tables indicate, the way the principle of self-financing of economic units is now operating results in an undue volume of credits to which some economic units resort both within and above the plan, so that the circulation and rotation of the capital are usually far below the potentials. The reserves for more effective use of circulating assets are far from completely exploited.

We feel the crediting system should be a more effective means of inducing the enterprises and centrals to meet the requirements of expanded reproduction with their own funds as far as possible, to resort to credits within the strict limits of the

about the evolution of the volume of circulating assets used and the rate of their rotation showed an opposite trend.



thoroughly substantiated credits plan and, of course, to avoid overdue credits by all means. The ratio between self-financing and crediting should show a considerably increased proportion of self-financing.

Credit should play a far more important part in management of funds on all levels of the system of organization and management of the sectors of the national economy. The enterprises' and centrals' activity should be organized to produce and sell the output as rapidly as possible and to minimize the stockpiles so that the respective units can finance themselves out of their own resources. Therefore the role of credit should be intensified and its functions broadened so that the principle of self-financing will really operate. It should enable the economic units to minimize and even give up borrowed capital by considerably increasing their profitability and general efficiency. Nicolae Ceausescu said, "Self-government, self-management and self-financing mean that every unit of any kind should come to live within its own means and resort to certain credits only in quite exceptional cases." (6)

We think self-financing of the economic units should be applied in such a way that they will be motivated as far as possible through the system of economic levers to increase the proportion of funds coming out of their own sources by attaining higher indicators of effectiveness and by fulfilling their plan tasks with a minimum volume of funds. Therefore the ratio between self-financing and financing the economic units out of society's general funds or crediting should be in favor of self-financing as far as possible. Because of the way the principle of self-financing is now operating, namely by formation of the internal funds for economic purposes according to the requirement in the plan instead of the level of profitability and the results in effectiveness and by reassignment of the resources formed that exceed the needs of growth of fixed and circulating capital in a given period, and because of the way crediting is done, the proportion of financing and crediting in the formation of the funds is critical. According to our conclusions, this interferes to a great extent with the strict application of the new economic-financial mechanism. Self-financing should result in a clear distinction among units as regards the efficiency with which they use the resources entrusted them by society and manage the property available to them. The enterprises whose funds out of their own resources are in greater proportion should have added advantages, and vice versa.

As we know the requirement for funds for economic activity now automatically includes the payments due on the credits received as well as the interest on the latter, whereas actually our calculations indicate that the enterprises use an above-plan volume of credits in executing the budget of incomes and outlays when the results of their economic activity are even below the planned tasks. Therefore credit is actually too easy a source of regular financing, with bad effects upon the efficient use of the fixed and circulating capital. It follows as a more general conclusion from the foregoing that the economic units (enterprises and centrals) are not placed in a position to seek and apply measures to rationalize the volume of funds or to implement the plan tasks with minimal funds.

According to the conclusions drawn from our study of the performance of self-financing as one of the major components of the new economic-financial mechanism, we think the methods of forming the funds created for the enterprises and centrals and, of course, the distribution of the profit require improvements. For this purpose a certain quota of the profit depending on the amount of unrepaid funds received from society should be paid into the state budget. Then the remaining profit available to the enterprise will be increased to a certain extent as the proportion of funds from



internal sources is increased through self-financing. The absolute volume of the payments out of the planned profit into the state budget, as that profit appears in the budget of incomes and outlays, should amount to the minimum sum to be collected by the state regardless of the absolute volume of the profit actually made. Payment into the budget of part of the profit in proportion to the funds received from society will be more effective in inducing the economic units to make more efficient use of their funds, to make a consistent effort to fulfill their plan tasks with minimal funds, to form their own funds through self-financing, and to take more interest in increasing their proportion.

Accordingly the profit remaining after the payments into the budget should be used, in given quotas, to form all the enterprise's and central's funds, both those for economic activity and those for other purposes including the fund for workers profit-sharing. Of course the sums needed to repay the funds received from society, in addition to the sums from amortisation, are to be allocated out of that part of the profit according to the legal provisions. And certain quotas to form the funds for the enterprises' and centrals' economic activity should be allocated out of the planned profit alone. The respective units would have more incentive to maximize the profit through the plan, to mobilize all possible reserves for the purpose, and to soundly substantiate the budget of incomes and outlays with the effective participation of all sections, all personnel and the entire workers collective. Therefore allocations should be made, also in certain quotas, out of the above-plan profit for the fund for housing construction and other social capacities, the fund for social programs and the fund for workers profit-sharing, the quotas to be set as at present according to the ways of obtaining that profit. The above-plan profit remaining after those allocations would be paid into the budget, the minimum proportion of that part being still set by law. Then the budget of incomes and outlays would become a highly important instrument for maintaining a strict regime of economy both in preparing and in executing the plan and would bring about maximum mobilization of internal reserves through the plan. With strict observance of plan and financial discipline to maximize the profit, the enterprises and centrals would have much more responsibility for preventing the action of factors impairing profitability and, what is particularly important, more responsibility for assuming greater plan tasks with the same volume of funds or with minimal increases in funds.

A number of problems also arise in connection with the funds for the units' economic activity formed in the course of self-financing that are not needed in a given period for financing fixed productive capital or the requirement for circulating assets increased according to the plan provisions. We believe the present system of reassigning those funds within the central or among centrals and of paying them into the state budget under certain conditions seriously impairs the role and functions of self-financing to enhance the responsibility of the economic units and encourage them to accomplish expanded reproduction more and more with their own resources obtained by improving their economic effectiveness. Actually the system of reassigning such sums means financing one unit with the resources of others that regularly produce better results from use of the funds. This flagrantly conflicts with the standards of the new financial-economic mechanism.

In view of the urgent need for any resources the enterprises and centrals have to be used solely in strict conformance with the provisions of the plan, the budget of incomes and outlays and the regulatory acts, with prevention of any kind of violation of financial discipline and the laws of the land, we feel these funds should remain



in the possession of the unit that produced them, in a separate bank account bearing interest encouraging to the economic units. The enterprises could be accorded the right to accumulate the sums not spent in a given period in order to meet future needs for increased fixed and circulating capital. And they could also be used for earlier repayment of the funds received from society to reduce the latter's proportion in the units' total funds for economic purposes. While the respective funds are kept in a separate bank account they would be an additional resource for crediting. These resources could also be used, on terms set by norms, for reassignment within the central or among centrals, but with a crediting system under the bank's control and without removing them from the possession of the enterprise that produced them. Then self-financing would strengthen the economic units' responsibility for more efficient management of all funds entrusted to their administration and for obtaining the greatest possible net output, commodity output, output in physical units, and profit for every leu in the form of fixed and circulating capital.

As we said, the credits system is to play a much more active part in the management of funds as the importance and functions of self-financing increase. The Plenum of the RCP Central Committee of December 1980 pointed out the urgent necessity for the stockpiles to be decreased and for the enterprises to cease resorting to credits whenever possible. Therefore we consider it a necessary measure for the credits granted an enterprise to supplement its own funds to be repaid out of those funds in proportion to their planned formation. Meanwhile the system of penalizing interest rates should much more seriously discourage resorting to credits outside the strict provisions of the plan, and if the credits are not repaid on time the entire profit that could be made with them should be transferred to the budget as a profit not due the enterprise.

Therefore application of the new economic-financial mechanism requires effective operation, with more efficiency on the level of the responsibilities of the enterprises, centrals and workers collectives, of the principle of self-financing of the economic units as an integral part of it. The measures for this purpose should make self-financing an important lever for effecting economic-financial self-administration so that the requirements of the new economic-financial mechanism will be fully met, including those for self-financing.

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